COMMODORE

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All you ever wanted to know about...

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Databases and Programs

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+ Special Amiga section

BIG MAG

MegaReviews – Nemesis the Warlock – Auf Wiedersehn Monty Samurai Trilogy – Express Raider – Leaderboard Exec – Shockway Rider ... a Football Special ... C16 Summer Events and Phantom – Tomahawk and PREVIEW *Guild of Thieves* – plus the Sensational Sinbad

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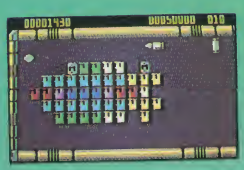
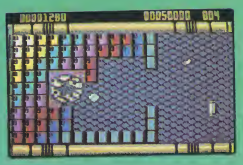
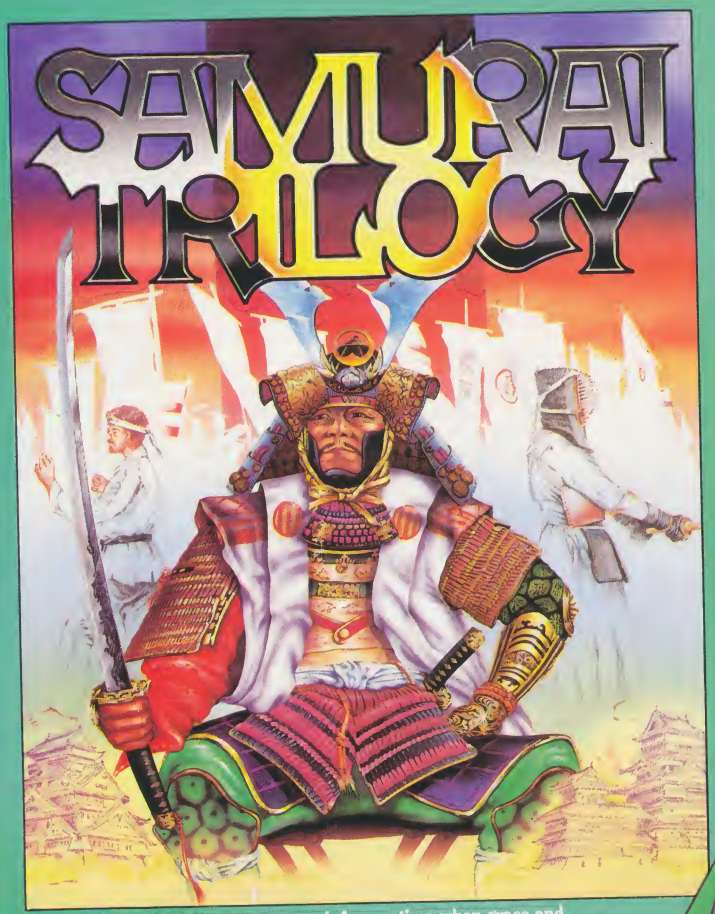
FREE! NEMESIS THE WARLOCK POSTER

Software...





Welcome to the ultimate challenge! A two way test of skill and nerve – can you out manouevre the awesome ogre and blast a path through the myriad of colourful bricks? Are your reflexes adept enough to retrieve the speeding missile, defelected from its block shattering journey or regurgitated contemptuously from the ogre's mouth?



In an age in which honour was revered, from a time when grace and beauty were virtues, a class of warriors set themselves apart to dedicate their lives to a perfection in combat that in itself was an artform, to a discipline of mind that became a religion. The attaining of such excellence required an extraordinary diligence in self-denial and training in order to achieve the ultimate accolade 'War Lord'. Kendo, Karate and finally Samurai are the tests that must be mastered before such honour can be bestowed.

Monty the Mole is still on the run on his most exciting and exacting journey to date, a whistle stop tour of the capitals of Europe, acquiring more than just the local scenery on the way. With Intermole and the local gendarmes hot on his tail Monty must fill his booty bag with enough continental treasures and currency to effect an escape to his dream island ... Montoss.

that's out of this world

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Gremlin Graphics Software Ltd., Alpha House, 10 Carver Street, Sheffield S1 4FS England.

The best value Commodore magazine in the Universe!

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FREE! NEMESIS THE WARLOCK POSTER PAGE SIXTY

CCI View

Dear Reader,

I get these days an increasing number of letters telling me, among other things, that CCI seems to be giving the kind of information that Commodore owners want. However, many of the letters go on to ask that writer's particular interest be covered at greater length. As these requests vary from suggesting that there should be more news or more technical software and hardware reviews to lots more games coverage and even more competitions; and a frequent request is for more letter space —or even longer letters! It is not easy to comply with everyone's wishes . . . Especially the poor old Plus/4 owners feel hard done by as there is little special software for them to use on their potentially powerful machines. Sometimes they even blame us for not reviewing enough! We would of course happily do it if we had more to review!

We sympathise with them as we do with everybody who feels their particular interest should be covered more fully. However, our problem is that space is always highly in demand and in consequence limted. The only way we can find to help is to increase the size of CCI which is rather an expensive matter. Just the paper on which we print has risen — largely due to the fall in the value of the pound — by approximately 15% in the last year alone. Nevertheless, this issue we have increased the size and attempted to allow more coverage of a number of different areas — which we hope should satisfy some people.

We have a special feature on the growing Amiga scene, with a close look at "Sinbad", another Mindscape spectacular. The Amiga's enticing graphics are clearly moving the whole home micro field into another dimension — as can be seen from the other articles in the same section.

We continue our ADD-ON Guide which has become regarded even by other Commodore magazines, we are flattered to hear, as the authoritative buyer's guide for the Commodore owners.

GEOS — a genuine addition to 64 power — has a new package reviewed and we also for the 128 owners cover a RAM expansion pack. Peter Gerrard continues his interesting article on technical hints and we come to the end of our first series of BASIC

On the games side, some really terrific products have been produced as standards constantly rise. Gremlin have taken one of the first Awesome awards of the year with the return of the popular 'Monty Mole'. Tynesoft's C16 'Phantom' also gets an Awesome and we preview what looks like a sure hit for Anco with their 'Summer Events'. Andy Moss, CCI's intrepid adventurer, also gets a preview of Guild of Thieves, an exciting follow-up to the successful Pawn. The programming side is bigger too with some exceptionally interesting new ideas.

We are announcing our next free cassette offer. In our next issue, we shall also be presenting a number of very special offers exclusive to CCI. By the way those frustrated Plus/4 owners should certainly take advantage of the Micronet which is also exclusive to our readers.

We are trying to keep the variety of the material we publish wide and the quality high. There is even some so-called humour with that atrocious Super Felix, about whom, surprisingly, I never get complaints except from people he mentions — or their lawyers!

However, whatever we do, it is intended for your own personal enjoyment. If you want it improved or changed or enlarged, go on telling me. I am always happy to hear your views on the magazine, and I will attempt to make what you want really happen.

Yours sincerely,

Antony Jacobson
Managing Editor and Publisher

Managing Editor and Publisher ..... Antony Jacobson
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Artwork ... Teresa Genève
Cover Illustration Jacki Hearle
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Photography ... Paget Joseph
..... Rob Moss
Research André Jacobson-González
Contributors ..... Tim Arnot
..... John Arthur
..... Zack Mule Skinner
..... Ian Bennett
..... Bob Collyer
..... Bill Donald
..... Len Keighley
..... Courtney King
..... Tony Lydeard
..... Will Light
..... Jeff Minter
..... Andy Moss
..... Ian Waugh
..... Rae West
..... Phil Wiltshire
..... Tina Milan

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Advertising ext: 280/286
Subscriptions ext: 274
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Owing to pressure of space — in spite of a "Big Mag" issue! — we have unfortunately been forced to omit certain items planned for June. These include Picasso's Revenge, The Zork Trilogy map, mentioned by Andy Moss, Scanatron's The Double, and The Perspectives Drawing Package. We apologise for these omissions and will try to include them in the next issue of CCI.

In the July issue of CCI, there will be another free software offer that will provide an excellent tape including utilities and other useful and entertaining programmes. The last date for requests for the first free issue cassette of software closes June 15th. Mailing of those requests already received will commence May 1st.

..news...news...news...news

Supersoft Offer Super Exec

Supersoft announce the re-release of SUPER EXEC, an integrated word processor, database, and accounting package for the Commodore 8000.

SUPER EXEC was written by Superclerk Limited, and originally sold at £1,100 plus VAT. Supersoft's first action on taking over the marketing was to slash the price to just £199 plus VAT.

The SUPER EXEC accounts suite includes, Sales, Purchase and Nominal ledgers, plus Invoicing and Payroll — all that most businesses need. Add word processing and filing, all for £199, and you end up with a bargain — some accounting systems cost as much per module!

Although the Commodore 8000 series is now over 6 years old, something of a revival has been in progress ever since Supersoft bought most of Commodore's remaining stocks last summer. Supersoft has been able to offer comprehensive support and servicing to users, which has meant that many users have been able to continue using existing systems rather than face a traumatic change to an entirely different system.

For further details contact Peter Calver on 01-861 1166.

Cheetah Moving Fast

Cheetah Marketing will be moving into new Hi-Tech, purpose-built premises. The building, three times the size of the company's current headquarters will enable further planned business expansion to take place.

Cheetah are increasing it's personnel by 25% to meet the demands of a massive increase in sales in it's current financial year. At present 26 new products are in the development stage; the biggest research program ever entered into by the company.

Cheetah's new lair: Cheetah Marketing Ltd, Norbury House, Norbury road, Fairwater, Cardiff CF5 3AS. Telephone: (022) 555525.

Hablamos Español?

Transplanted into a Spanish town, you speak the native tongue... you HEAR your "brain voice" pronounce what you elect to say. Your "teachers" answer you, depending on what line of conversation you have started, and you hear their responses also.

It is Kwik speak I — a new Amiga Spanish audible Tutor.

KWIK-SPEAK drills you in vowel sounds, consonant usage, accent and stress. You can go on or repeat, as often as you like — at the press of a key.

The methods of KWIK-SPEAK were developed during World War II in Lima, Peru, where American and British employees of airlines and embassies HAD to start speaking Spanish quickly.

KWIK-SPEAK 1 (Spanish-1) consists of over 420K of coding, with almost 30 chained programs contained on a single (2-sided double-density) micro-floppy disk. Although 512K of memory is required, you can operate with only one disk drive.

Price $46.95

Contact: Eclipse Data Management Inc. 1930 West Glenoaks, #3 Glendale, CA 91201 (818) 840-8757.

New Star Printer

Star Micronics U.K. has launched a new dot-matrix machine, the NR-15. It provides draft printing at 240 characters per second (cps) and near letter quality (NLQ) output at 60cps.

As standard, the NR-15 comes equipped with both tractor feed and semi-automatic sheet feed, while completing the range of paper handling capabilities is an optional, low-cost automatic cut-sheet feeder.

Another feature, common across Star's N-range of business printers is the slot-in interface card system. By selecting the right card, users are guaranteed a perfect match with their computer system.

For the micro user wanting high speed printing as well as good near letter quality printing, the NR-15 costs £589.

Join the Gremlin Navy

The free world is in peril — war has been declared and the enemy is closing in. Your weakest point is the coastline so a strategic defence initiative has been adopted.

Your mission is to patrol and defend the inner sea using all the modern weapon systems with which you have been supplied. Seawolf and Exocet.

Convoy Raider is a new Gremlin Graphics strategic war game with a difference. The future of the country lies in your hands; frighteningly powerful weapons are at your disposal and important tactical decisions must be made. If that kind of power and responsibility does not scare you, take the helm!

Gremlin's Aliens

The aftermath of a nuclear holocaust is the scene, and the earth's surface is a barren and hostile place, incapable of supporting human life. Long ago, the survivors withdrew to underground complexes, and now, after years of dedicated research, they have produced an android, Cybourg 64, who may provide the answer to their prayers.

Pure skill and judgement in controlling Cybourg are the assets needed to help him wipe out the aliens. Alien Evolution is played from a 3D perspective, looking down at the planet, and features transporters to zip you from area to area. Monochrome graphics and full scrolling are also included and overall, a good time is to be had for those who enjoy a fast and furious challenge with a difference.

Alien Evolution will be released in June 1987.

Zynaps Zooms

Zynaps is the first game by Dominic Robinson, a young programmer who successfully converted Hewson's Uridium to the Spectrum. Dominic and a partner John Cumming have now created for Hewson an original and reputedly awe-inspiring game which will appeal to all dedicated shoot-em-up fans.

Use bravery and cunning to escape an alien infested space station, battle through asteroid storms and infiltrate unknown planets before entering the 'final conflict' phase of this horizontal scrolling epic.

Choose your path carefully, the galaxy depends on you!!

C 64 £8.95 (c), £12.95 (d).

How to win at computer games . . .

Trilogic have upgraded their Expert cartridge with ESM.

The compact ESM module is fitted with LED, push button and connector. It fits between the cartridge post and the Expert cartridge and, as with most Trilogic systems, it has no effect on games action and can be left connected but otherwise ignored.

When a protected program is loaded which needs the ESM, the LED will glow. To stop the game, simply press the push-button briefly. The program will be paused and the Experts machine-code monitor be activated. From then on, the Expert can be used in the normal way — to alter, restart or save to disk/tape as you choose.

The new ESM costs £7.95 inc. VAT and postage.

Contact: Trilogic, 329 Tong Street, Bradford BD4 9QY. Tel: (0274) 684289.

Power House Value

The Power House has announced that every game released will contain either a free game of a free audio track.

All the Power House music is provided by the House Electronic Xperience, headed by Wayne Allen. Wayne, formerly of Kick Partners, has appeared many times on National TV, the John Peel Show on Radio One and in the music press.

The Power House's Andy Wood is already claiming tremendous reactio to the first batch of releases from consumers, distributors and retailers alike. The Power House first releases are The Terminator and The Equalizer, both £1.99.

..news...news ...news...news

ACE II

Cascade Games, creators of the smash hit "ACE" (CCI OSKAR Winner) tell us that they are working on a follow-up imaginatively called ACE II. It will be for one or two players with the screen plit horizontally. ACE II will be initially released on the 64 but almost immediately published for the Plus/4. ACE I sold terrifically well on all formats and more the 15,000 on the Plus/4 alone which must make it one of the best sellers for that machine.

Palace's Barbarian

Palace Software are bringing out Barbarian, which they claim is "the most realistic and exciting combat game yet seen on a home computer". Created by Steve Brown, who was responsible for the monster hits Cauldron and Cauldron II. Barbarian features "riveting music" and sound effects by Richard Joseph, the musician responsible for all the sound in The Sacred Armour of Antiriad and Cauldron II.

Barbarian contains two games in one. Load Part One and perfect your swordsmanship against the finest warrior in the land. This section can be played against another player or the computer. In Part Two you must fight to save the Princess from the clutches of the Dark Sorcerer, Drax.

Sixteen different moves, including headbutt, kick and webb of death, set Barbarian apart from any previous sword-fighting game. "Other effects, such as the decapitation, must been seen to be believed."

Barbarian contains all the classic elements of the sword and sorcery genre; Marvel at the muscular barbarians! Gasp at the beautiful Princess! Hiss at the evil sorcerer! Cringe at the hideously deformed dwarf.

The game will be available for the Commodore 64 of £9.99 and the packaging features beautiful Page 3 model, Maria Whittaker.

40 Activision titles go Silver

What the people who have signed or called "The Licence Agreement of the Year" has been made between Telecomsoft and Activision (UK) Ltd for nearly forty Activision products to be released in the Firebird Silver 199 Range over the next twenty four months.

Not only previously released products, but also some hitherto unreleased ones feature in the line up.

"There are some really cracking games here for £1.99." says the Silver Range boss Chris Smith. "Titles such as 'Back to the Future', 'I of the Mask', and Pitfalls I and II' head the series of previously released material, and offer superb value for money at £1.99. In addition, we have the publishing rights to three Commodore 64 games which are brand new to the European market — 'Breakstreet', 'Futureball', and 'Pyramids of time'."

'Park Patrol' for the Commodore 64 was recently released in the Silver Range under licence from Activision.

The first title are likely to hit the shops early in the Summer.

Foreign Language W/P

A new PC/MS-DOS package from INTEX · SOFTWARE SYSTEMS will enable PC users to use their existing keyboards for a wide range of fully processable international character sets with a simpler user-friendly menu.

The basic Western European package covers **nine** different character sets which can be selected and mixed at a keystroke. The French setting for example, changes the imput to the standard AWERTY positions used in France, regardless of the keyboard used. Other options on the same disk include US & UK English, French, German, Dutch, Spanish, Italian, Portuguese and Danish with all the normal word processing options at an affordable price of **£199.00**.

For PCs fitted with a Hercules graphics card the range of options includes full-logic **Russian, Polish, Arabic** and **Hebrew** data entry combined with English.

The star of the show in terms of performance has got to be the unique ZLZ **Chinese** package with an enormous **10,000 character** set from any standard PC, XT or AT keyboard for only £300. There is even an additional interface module that will enable the use of packages such as dBIII™ and Lotus 1-2-3™ with Chinese characters!

All files are encoded so that they can be transferred via modem or network to any other device using the same software making it a faster and higher quality transmission device for foreign typescript than fax.

Available shortly will be **Greek, Turkish** and **Japanese** options.

Contact: Intex Systems, Tel: 0462 811813.

Eagles — The Electrifying Facts

Eagles is the next master blaster which Hewson are releasing to shatter the lives of all peace loving Commodore owners. The graphics are quite stunning and the game looks set to conquer the C64/C128 market as the number one Uridium sequel.

Written by Danish programmers Per Madsen and Bo Nielsen, Eagles is a fast and furious shoot-em-up set on the planet Zinox.

Played over eight levels there are an increasing number of different aliens to blast and explode and a host of androids to collect. Drop the androids into a shute on the rugged plant surface to enter the energy based bonus phase.

Eagles has single, two player and team options to choose from. Both Eagles fighters are shown on the screen at the same time to enhance the reality of the situation.

Eagles is for the C64.£8.95 (c) £12.95 (d).

Catch 23 from Martech

Martech has announced the release of Catch 23, a combat arcade adventure with 3-D vector graphics for the 64.

It is your mission to explore an island and find the heart of the development complex. Once there you must steal the design of the CK 23 and then set a time delay mine in the nuclear reactor. The explosion which follows will devastate entire island.

The action takes place on a moonless night, hence you have been provided with a military image enhancer. Using advanced 3-D vector graphics with full collisio detection, the player sees an accurate representation of his world as he moves within it.

The world is heavily populated, the player being able to see and explore entire villages. It is also possible to enter and explore buildings. There are useful objects and vital clues to be discovered before you have any hope of penetrating the complex itself.

The island map contains tens of millions of occupiable locations. It consists of mountains, plains, marshes, villages (containing a variety of building types), plus, the huge military complex. Catch 23 is a vast game which presents the game player with an enormous yet achievable challenge. Martech tells us it is the closest thing yet to actually being there.

Catch 23 will be £8.95 cassette, with £12.95 disk.

Contact: Headlines PR on 01-258 3999.

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Lesley and Jon — *It's amazing how many people join Dateline 'for a laugh', but behind that lighthearted attitude there is nearly always the hope that it might lead to a special relationship. Lesley, a divorcee, didn't really think Dateline would be able to help her. Her children made it difficult for her to get out, but when she met Jon, a farmer, it was apparent to both of them that they were at the start of something long term. They were married in the autumn and are overjoyed at the turn their lives have taken.*

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Lisa and Barry — *'If you are not meeting enough people join Dateline. It certainly worked for me' says Lisa. Barry's friends are very impressed he met someone so attractive. They were engaged within a few months. Lisa's sister has now joined 'looking for another Barry.'*

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- ☐ Practical
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2

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- ☐ Creative writing/painting
- ☐ Poetry
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Send to: Dateline, Dept CCD 23 Abingdon Rd., London W8 6AH 01 938 1011

✂ **Dateline**

...news...news...news...news

Prism Cheapos

Prism Leisure have signed an exclusive distribution agreement with Argus Press Software Ltd on selected back catalogue titles.

The agreement means that Prism Leisure will sell games such as Give My Regards to Broad Street, The Force, Schizofrenia, Johnny Reb II, amongst others, on Commodore 64 at new low prices allowing retail prices of £1.99 and £2.99.

Contact: Prism Leisure Corporation, Unit 1, Baird Rd, Enfield, Middx. EN1 1SJ.

Gothic Horror from CRL

CRL is to release 'Frankenstein' for the 64/128.

Based on the classic novel by Mary Shelley you play the part of Professor Frankenstein, the demented scientist whose bizarre experiments create the ultimate monster.

This three part adventure will have horrific animated digitised graphics and a powerful descriptive text. It will also come complete with terrifying sound effects.

Frankenstein £9.95 (c) £14.95 (d).

For further information contact Headlines PR on 01-258 3999.

Star Launches NX-15 Wide Carriage Printer

Star have announced the launch of their latest N series printer, the NX-15.

Designed as a direct replacement for the proven SG-15 model and priced at £389, it offers a combination of price and performance and ease of use. Included as standard are tractor and friction feed together with an automatic single sheet feeder for letterheads. When printing the NX-15 coasts along at 120cps in draft mode or at a satisfying 30cps in Near Letter Quality.

Like all Star's N series printers the NX-15 features a full featured front control panel which eliminates the need for fiddling with DIP switches. Typestyle selection, draft or NLQ, print pitch, forms and paper control are all under finger-tip control. Interfaces are available in either parallel or serial form and can be slotted into the printer in seconds. Full IBM and Epson compatibility is provided.

Its baby brother, the NL-10, which was launched last year has already captured some 25% of the market in this price and performance range. It was called ". . . the Rolls Royce of these printers," in a recent comparative review while the Consumers Association magazine Which? gave it its Best Buy rating.

Oxford Basic 64

From the publishers of Oxford Pascal, comes Oxford Basic for the Commodore 64.

Oxford Basic is said to be the complete 64 Basic programming environment and gives the user a library of powerful utilities: The Oxford Analyzer, a report/optimisation utility designed to enable you to produce high quality software; The Compressor to eliminate time consuming spaces and REMs, packing up to 255 characters on to each line; The Oxford Toolkit offers new commands to make BASIC programming more enjoyable and effective.

All of this together with OX-COMP, a fast, fully compatible BASIC compiler. It gives y ou machine code without the need to write in assembler. OX-COMP also contains a powerful optimiser which brakes programs into fragments to reassemble them simplifying the complex and removing the unnecessary.

Price: £34.95.

Contact: Systems Software (Oxford) Ltd, 16B Worcester Place, Oxford OX1 2JW. Tel: (0865) 54195.

New Superhero!

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Market Leaders

On a quiet street, near Walsall, in what was once the heartland of industrial middle England stands an unimpressive office building. The ground floor is occupied by a Tandoori restaurant and a ladies' hairdresser. Above them on the second floor in equally unspectacular offices lives a computer games company that some believe made more profit in 1986 than any other in the U.K. — and that includes U.S. Gold and Ocean who are generally thought to be the largest home entertainment companies. This successful games company is Elite which has achieved in the last eighteen months a record of hits that is second to none. Frank Bruno's Boxing, Commando, Bombjack, Ghosts and Goblins, Paperboy — all reached the number one spot in the charts and stayed there for long enough to make them top sellers. There were others too that even if they did not reach number one still more than paid their way.

The innocuous appearance that its unobtrusive home above the tandoori and the hairdressers lends Elite is deceptive. Its success is better reflected in the cars that stands in the parking area — a brand new black Jaguar Sovereign and a golden Lotus Turbo Esprit. The two cars belong to father and son, Brian and Steve Wilcox, who own Elite completely. Together the Wilcoxes are building a software house, not yet three years old, that is becoming a unique, well-oiled machine for the production of hit computer games and the making of large sums of money.

Steve Wilcox is tall, slim, mustachioed. He smokes nervously and at 27 he is reputedly the possessor of a bank balance in the high figures which with other assets, makes him the U.K.'s youngest software millionaire. His quiet manner conceals a shrewd mind that has an uncanny knack for picking winners both in ideas and in programmers capable of carrying them out.

Brian Wilcox, the father, is a heavyweight corporate manager who has climbed from apprentice "in metal bashing", to owning his own foundry from which he retired and then sold before entering the software business and running the administrative side of Elite. While son Steve has made it big young, Dad, with a rueful twinkle claims to be the oldest man in a top position in the computer games world. He may be right but the depth of his experience allied to the younger Wilcox's flair make them a very formidable team in deed.

Playability

Elite came about by a series of apparently unconnected chance happenings in August 1984. Steve Wilcox had finished college with a degree in chemistry spent 10 months in a big industrial company, got frustrated and started a computer shop in Walsall just a few miles from the family home. By Autumn 1983, he was selling Spectrums "by the truckload". Richard, Steve's younger brother, then 15, got hold of a computer his father had brough home from an abortive business software venture and taught himself to program. He wrote a game for the Atari, then one for the Spectrum. It was called "Blue Thunder". It was Elite's first game and it became a top seller.

Next came Kokatoni Wilf which was Elite's first Commodore game. It got to number four in the charts. That was followed by Elite's first licensed game "Fall Guy", linked to a TV series. "It was pretty awful" admits Steve Wilcox. But the idea of linking with an outside aid to public awareness of a game appealed and Elite signed to produce its first coin-up conversion — a field in which they are now regarded as outstanding. Their first conversion was Airwolf. It was written by Richard Wilcox in just three weeks. It was a smash hit and sold over 200,000 copied, At the time it was second only to "Ghostbusters" as a big seller.

Elite began to bring other products on stream. Richard worked once more on Grand National and at the advantages of 16 retired from programming to concentrate on his A level examinations. But as in good stories, there was a little drama in the Elite story. For the next nine months there was no more success. Things must have looked dark in a business where you are only as good as your last release. "But we had an advantage" explains Steve Wilcox. "We were later than other software companies. So we learned a lot of lessons

from other people's mistakes. We knew what we had to produce was high quality games." It was at that time too that Elite began to try to bring in a policy of producing the same game on all formats simultaneously.

The creation of a computer game generally depends on the ability , the concentration, even the physical stamina of programmers who are very often in their late teens or early twenties and are more usually computer enthusiasts than business people. An idea for a game will be approved by a software house and given to a different groups of programmers to produce the Commodore, Spectrum and Amstrad versions. Because if the same group of programmers has to do all three then they may not be so expert in all three formats and certainly cannot produce them all at once. Because of financial pressures on software houses — it can need an investment of £100,000 or more for one game these days — when a single version is finished there is a great temptation to rush the game out into the market and get some of that costly investment back.

Elite realised that the impact on the public of releasing a game right across the formats at the same time would be that much heavier than just on one format. The press and the buying public would be impressed that something important was happening and the sales of all three formats would give it a much better chance of hitting the top numbers on the charts. Releasing all three at once had hardly been done at that time and some reluctantly admiring rivals believe that this marketing strategy has had a remarkable effect in driving Elite products to the top of the charts.

Elite maintains there is another reason for their success — the sheer quality of their products. They achieve this by "cherry picking" their programmers and their games. "We scrap a lot of things...even finished products. We've invested £50,000 in a project and thrown it away...There are several projects we've got to completion and didn't publish..."

To save a repetition of this wasted investment, they have now decided to build up their team of programmers and to examine thoroughly just how a successful computer game gets written and produced. They have just conducted an intensive investigation among themselves into the conditions necessary to ensure success. One of those conditions they say is "Quality Control".

"Quality Control" is not a term generally heard in games software houses, where word like "playability" or "hi-res graphics" are pop up more often. This emphasis on "quality control" stems from Brian Wilcox's past management experience in industry. For this and other administrative functions he has built into the organisation a series of systems that makes Elite, he claims and others back that claim, the possessor of the most efficient distribution system of any U.K. games software company. He states that anyone making an order that Elite receives before o'clock in the afternoon will have it fulfilled the same day. He points out that Elite's 1986 turnover of £3 million was accomplished from a warehouse, tiny by comparison with most of just 600 square feet. The absence of flash offices...the efficient use of space...the smooth running distribution system...no wonder Elite is so profiable...It is, it is reputed, to be sitting on a "cash mountain" of well into seven figures which gives it substantial financial muscle when it come to negotiating coin-op and other linked conversion rights.

The Hit Pak

Elite's ability to produce hits has been extended by the acquisition of more expert programmers. Someone has called them echoing Elite's recent completion success "The Hit Pak". It is currently working on a game being programmed by a team that came from the famed Ultimate company. CCI succeeded in setting an exclusive look at "Buggsey Boy". This is a racing game that might be considered somewhere between a simulation, in that you have to use your skills to keep your racing car on the road in spite of a variety of obstacles that rush at you, and an out and out arcade coin-op in that it is fast and action filled. It looks a class above anything that has previously appeared in the "Pole Position" style.

'Buggsey Boy' is like all Elite's games these days, designed to appeal to more than just a U.K. market. It will clearly be popular wherever computer games are played. Elite's overseas sales now exceed its U.K. market. It seems, with some satisfaction that the Wilcoxes will tell you, that the influence of the once almighty U.K. distributors like Centrsoft is declining. Although Elite still sees plenty of room for growth in its home market.

It is growing in the number of titles it is bringing out, too. This year it will bring out 12 — 6 arcade conversions, 3 follow-ups to past successes and three games of their own design. They see their opposition coming not so much from the U.K. "If elite to be a world power as a software company, the Japanese will be our competition not far down the line."

They are confident enough of themselves to admit that they are still learning. "When we looked at ourselves." Steve Wilcox comments about their recent investigation. "We discovered that we didn't have the capacity really to design something totally original... Doing all these conversions though had taught us the difference between a good game and a bad one. We have built up the technical skills. The next stage is to produce a game where the design is ours."

They have reason for confidence. Their first release this year Bombjack 11 went to number 1 "The first of 1987...It was an original design...We just used the name to carry it forward..."

There is not doubt that Elite has earned considerable respect both in the software industry and from game buyers. The Elite logo is becoming familiar enough to persuade the game player with money in his pocket to spend it on an Elite game because the company's previous games have been tops in playability and high in value. The consistency of its quality brings it comparison not so much with Ocean, which is generally thought of as its rival, but with the sharp quality and consistent vitality of another company associated with "The Empire" of U.S. Gold and Geoff Brown — Ian Stewart's Gremlin. If, as the Wilcoxes predict the number of games houses is going to go on shrinking, there is little fear that Elite will not be among the survivers. Even though the elder Wilcox is preparing for a second retirement, Steve Wilcox shows no sign of being bored with running his own show or the rewards it brings — weekends in the U.S. or skiing and a Turboloaded Lotus. Picking winners may be, as the quickly smoked cigarettes reveal, something of a strain, but it is a lost better than being a management trainee in a big company or even selling Spectrum by the truckload. No, if careful planning, intelligent management, well-organised systems, a dedication to quality — and of course sheer playability can bring success in games, then you can be sure that Elite is going to go on adding to that cash mountain and its growing list of number one chart hits.

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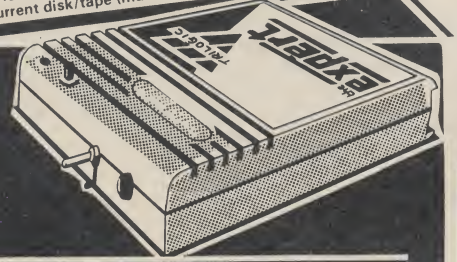

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We've included some figures to show you what you can do. To tie this in with SID (the 64's music chip) one figure shows which pitch numbers produce which notes. Keep these handy because future articles will refer to them.

(Figure 2.4, page 21)

Pitch

The two most important items of information we get from a piece of music are the pitch and the note and how long it lasts. In conventional notation, notes are arranged on a set of five lines called a staff or stave. Pitch is shown by placing notes on the lines or in the spaces. The higher the note is placed, the higher the pitch. The notes are given letter names, A through to G. When you reach G you start again with A.

Notes can be placed above and below the lines to extend the range. These are written on and between short lines called leger lines which are really just an extension of the stave. To increase further the range of notes and maintain readability, we can add another stave below the first one. To distinguish one stave from the other, each is given a clef sign which shows the position of the notes in relation to the stave. The two most common clefs, and the only ones we will concern ourselves with, are the treble or G clef and the bass or F clef.

The interval in pitch between two similar letters is known as an octave and represents a doubling in pitch or frequency. The interval between a note on a line and a note in a space is either a tone or a semitone. We can do a few experiments and see — and hear — what scales sound like. The following program shows the range of pitches SID is capable of. It also demonstrates the type of sound SID can produce and you can hear how varied they are.

(Program 1.2, page 6)

It plays a series of semitones. Even if you can't read music you can probably tell that this is not a 'proper' scale. Try this program:

(Program 1.5, page 5)

You can probably also tell that this is not a complete scale. You can produce a scale quite simply by making these alerations:

```
150 FOR N=1 TO 8
240 DATA 16,195,18,209,21,31,22,96,
25,30,28,49,31,165,33,135
```

This sounds complete and more musically satisfying than a sequence of semitones. If you're not familiar with the workings of the SID chip then take these programs on trust. All will be explained in the course of the series.

The SID chip has a range of over eight octaves. The keyboard diagram covers only the middle five, mainly to keep it within manageable proportions but musically, you will find the sounds in this range to be the most useful and other pitches are easy to program if you need them.

You can make a simple modification to the first program (1.2) to test the musical usefulness of each octave:

```
145 PRINT"OCTAVE?";
146 GET O$:IF O$<"0" OR O$>"7"
  GOTO 146
147 PRINT O$:O=7-VAL(O$)
200:
290 IF TI<TM+25 THEN 290
310:
```

Scales

An important property of music, not always obvious at first sight, is the fact that there are really only 12 separate notes in the whole musical spectrum. When you reach the 13th note, the sequence is simple repeated and the notes sound an octave higher. Make the following alterations to the first program (1.2) and you hear the six C notes available from the sound chip:

```
220:
290 IF TI<TM+25 THEN 290
300:
```

Other scales

The notes on the keyboard can be arranged to form scales other than major scales. Scales provide the basic

building blocks from which a tune is constructed and give the music a sense of tonality or affinity with a certain group of pitches. If we play only on the black notes of a piano we are using five notes which form a pentatonic (meaning 'five') scale. It sounds very oriental — or what Westerners consider to be oriental. In more common use is the minor scale which you can hear by making the following alterations to the second program (1.5):

```
150 FOR N=1 TO 8
240 DATA 16,195,18,209,19,239,22,96,
    25,30,26,156,31,165,33,135
```

Other scales exist. These contain various numbers of notes and various intervals but most of them are written using the standard notation we are discussing.

The length of a note

There are two aspects in the timing of music which should not be confused: the first is the duration of individual notes and the second is the tempo or speed of a piece of music.

The duration of an individual note is relative only to the other notes in the piece and in no way does it determine the speed or tempo of the music.

(Figures 2.6 and 2.7, page 25)

The duration of notes in standard music notation is shown in the figure along with their English and American names. The American names are easier to understand immediately and seem to be attracting numerous converts from the English system.

The duration value shows how long each note sounds in relation to each other. If a note has a dot placed after it, this lengthens its duration by one half. The tempo of a piece is determined by an instruction given at the beginning of the music and although fast pieces will often contain semiquavers and demi-semiquavers, you cannot absolutely determine the speed of a piece by just looking at the notation.

Rests play an important part in music too, and they go by the same name as their note equivalent with 'rest' tagged on the end, eg quaver rest. These can be increased in length by one half by the addition of a dot but it is more usual to see a rest of the equivalent half value placed after the other.

Beats in the bar

The time signature of a piece of music is indicated at the beginning of the stave by two figures, one over the other. The upper figure denotes the number of 'beats in a bar' and the lower figure denotes the length of each beat. For example, a time signature of 2/4 tells us that there are 2 beats to the bar, each made up of a quarter note or crotchet. 3/4 is three beats to the bar, each a crotchet, and is the time signature in which most waltzes are written. 4/4 is sometimes written just as a large C and referred to as Common Time and is by far the most common time signature of all encompassing quicksteps, foxtrots, rock 'n' roll, ballads and most classical music. The upper figure indicates the pulse or rhythm which runs through the music.

Time signatures can be altered at any point in the music and, indeed, can consist of any combination of notes the composer wishes to use.

If you're at all serious about music, you could do worse than grab a copy (preferably by legal means) of How To Read Music by Helen Cooper, a distinctively written and well-illustrated £3.50's worth of information from Music Sales (0284 702600).

In the next article we'll navigate our way around the SID chip reigster map and see how to make it produce the sounds and pitches we want. Reserve next month's copy now — or buy the book. Or both!

I.W.

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Dear C.C.I. I thought that I would Write on....!!

Dear C.C.I.,

I wrote to you regarding the sale of software for the Commodore C128 explaining that I had not found any shops within reasonable driving distance to where I live. Well, having recovered from a deep depression and removed my head from the rope to which I was about to hang myself, I decided that at least one more attempt at finding a shop that sells software for my much loved C128 was necessary. Afterall there **must** be one near me, somewhere? Well there is. This Aladdin's cave is called **The 64 Software Centre** which happens to be near Holborn in London. Most of you will know about the mail order as advertised in CCI but you may not know about the small shop in 1 Princeton Street, London.

A complete stock is held there for the C64 (or 64C if you prefer), C128 and of course the Amiga. Plus 4 owners are not catered for, but if you were to see the stock you'd know why. Not only does he stock the software but he also has the computers to demonstrate the software with. As if that was not enough he is knowledgeable about the differences in software, i.e. in my case the word processors. I finally opted for Pocket Writer 128 through his help (it's a shame I didn't ask his name). To sum it up, a more helpful person than you could hope to meet runs this much needed shop.

Obviously I am writing this letter using **Pocket Writer 128** and I haven't got used to all the facilities yet, but I think a few comments are necessary. First, I had great difficulty in setting up **Pocket Writer 128** for my printer, which is a CBM MPS1000, to run NLQ in Commodore mode. Second, it took me a bit longer to transfer **Easy Script** files than I expected but I think this was due to my inept methods of reading the reference guide (engage brain before fingers?). Lastly, the dictionary for **Pocket Speller** is in my mind a very daunting task to set up (all those words), but I'm getting there slowly. I've completed all the A's, just another twenty-five letters of the alphabet and a few files to go through. Well done **Digital Solutions Inc.**

Yours gratefully,

M. A. Hinton, Harlow, Essex

P.S. While I was in **The 64 Software Centre** a chap came in and started to run a very interesting piece of software/hardware on the C128. The hardware was the expansion ram and the software was running digitized pictures from a video camera, giving the effect of animation. I bring this fact to your attention because I had been to the Ninth Official Commodore Show and I had not seen anything like this at the show. My question is very simple, "WHY NOT".

Dear C.C.I.

I have written to many magazines, many times. I have never had one letter printed. This really annoys me, especially as the magazines encourage people to write to them. Do the people at these magazines know that first class stamps are expensive, and that great effort is put into every letter? It seems a great shame to waste my letters, or at least for me it is.

I think that most magazines don't print letters unless they're really exciting, funny or in general sensationalised.

I have never written to your magazine, mainly because I haven't really noticed your section before. I apologise for this and hope that it is accepted. I do have my reasons. I don't know but to me this letter seems OK. Please don't be another mag, and annoy me. PLEASE PRINT MY LETTER.

Do you realise that you have been printing an advertisement in your magazine that is false. I sent off for an alleigning and cleaning Kit for CBM tape recorder months ago. Surely it should have arrived by now. Please can you sort them out and give me news of them. The address is:— 28 Farmer Way, Netherton, Merseyside L30 4XL. Tel: 051 521 2202. I would be most grateful if you could do that for me.

I think that your magazine is very good, I'm sure a lot of other people do as well. The only thing is that it's a bit dull in places for my tastes.

Yours faithfully

Peter David Dudley, Surrey

Dear Peter

I'm not surprised you haven't had many or any letters published. You sound as someone here said, 'a pompous little twit.' And what is your letter about? Not getting published? It's a tough life kid. Nobody owes you a living or publication. A published letter has to be interesting and express its point briefly and interestingly. Your letter does neither, and it's certainly dull in places too! You don't even properly explain what your complaint about the advertisement really is. Is it a classified ad? Have you proof that your money arrived? Why should we sort it out if you haven't made enough effort? And it doesn't sound as if you have. But we have *published your letter. Why? As an example of what* not *to write to a magazine and a dire warning to others. If you want publication don't sound or write or even think like this!*

Dear C.C.I.

With reference to your two reviews on 'Simulations' in the March edition of CCI I was immediately interested.

I sincerely hope however, that your judgement of 'Super Huey II' was better than that of 'Ace of Aces'.

Though I have never seen or played S.H.2 I have had many hours under my belt from the original version, and am looking forward to seeing S.H.2.

As for 'Ace of Aces', well, what can I say. YUCK! — the loading is in sections (not too bady, but why?), and the title music is awful. I think it's supposed to be 'Land of Hope & Glory' — or something equally stirring. The notes are played out of key and time, the result being that it sounds as if it's being played by deaf Russians with the score sheet having been written in Japanese. Granted, the graphics are very good — particularly the side views.

BUT:— i) Why do enemy planes always appear to be in the cloud?

ii) Why is the ground never visible — except through the bomb bay (apart from the fact that the cloud is 3,000 ft thick!)?

iii) Why is there never any flak across Europe or at the target?

iv) Why is there no fighter cover over Europe or at the 'bombable targets?

The programme is to put bluntly, BORING. Set the plane for the right direction using your compass, adjust to a suitable altitude and set it level before going to put the kettle on whilst you fly across Europe. Come back and bomb the target (easily done — particularly the subs) readjust the heading and altitude for London before going to make another coffee!

If I was asked for my rating it would just about manage IFFY. Taking the price into account (£9.95 — cassette) it would then be unprintable except in hieroglyphics.

At the same time as buying PoP (Pit of Pits) I also bought the disk version of 'Gunship' (£19.95). The difference apart from helicopter and Mosquito is absolutely incredible. Personally the rating for 'Gunship' is MEGA unless of course there is a higher one!

It's well worth the money, is a very good simulation — though probably for the more dedicated simulation addicts. How about a review for the other readers? I'll be looking forward to see it to say the least!!

2nd Lt. Flying Pig N.D.S., A.C.M., S.E.A.C.R., A.M., Purple Heart, etc...

G. E. Schofield, Oldham

Andy Moss replies

I think that you are being a bit over critical here Mr. Schofield, as in the review I did point out that Ace of Aces was not meant to be taken as a serious flight simulator but more of an arcade shoot 'em up, which concentrates more on action than realism. I also said that it would appeal to youngsters more than the dedicated flying enthusiast. As for Gunship, I absolutely agree with you, (see the review in May's CCI).

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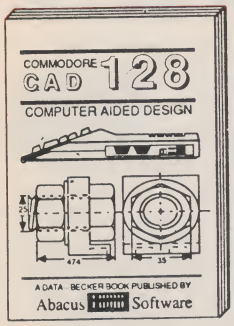

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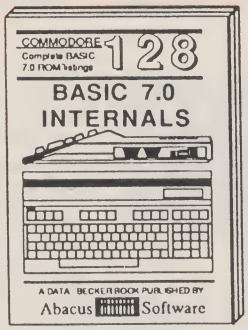

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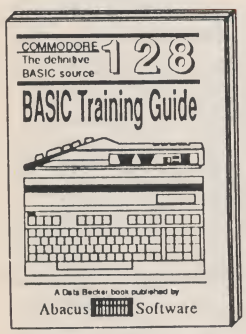

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The complete reference work for C-128 users wanting complete knowledge of Commodore's BASIC 7.0. Topics covered include Data-flow and program design, advanced programming techniques; menu creation, graphics programming; multidimensional arrays, sort routines, data management and window programming; BASIC internals, token table, and the monitor. Included are several useful utilities. A must for BASIC programmers wanting to make fullest use of their 128's.

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Presents dozens of programming quick-hitters. Useful techniques on the operating system, stacks, pointers, keyboard, sprites, hi-res graphics in 40 and 80 column, the BASIC interpreter, 6502 and Z-80 assembly language and more.

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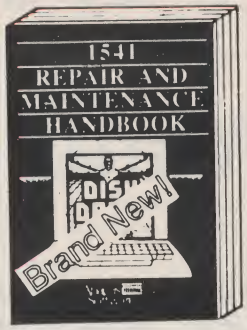

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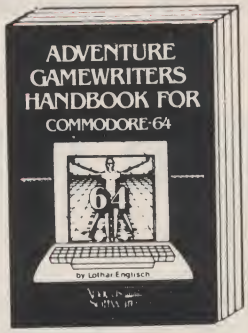

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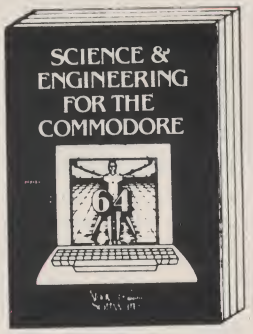

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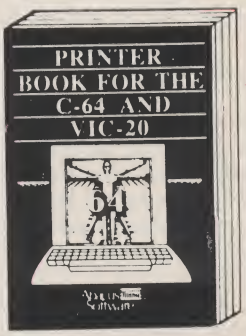

Printer Book for the C64 & VIC-20

Here's an in-depth handbook that explains all of the things that you can do with your '64 (or VIC-20) and a printer. Topics covered include: interfacing your printer to the computer, using secondary addresses for various printers, using printer ports and the principles of printing graphics: utilities and programs for text and graphics hardcopy, formatting program listings and more.

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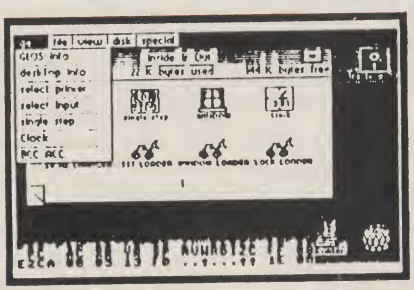

The most thorough guidebook to effectively using GEOS (Graphic Environment Operating System). The sophisticated GEOS user interface gives the Commodore 64 the power and ease of use previously found only with computers costing many times more. Whether you're a beginner or a seasoned computer user, if you use GEOS, then this book contains the information you need. **GEOS Inside and Out** gives the beginner a gentle introduction to operating GEOS. Later chapters acquaint the reader with the geoWrite and geoPaint applications, as well as GEOS accessories. One chapter is dedicated to practical uses for GEOS by running step by step through applications. **GEOS Inside and Out** contains a complete listing of **FILEMASTER**, a fantastic utility with which you can convert your own '64 programs to GEOS format. **FILEMASTER** lets you create a custom icon for the converted program, as well as its own info screen. Other topics include a useful Tips and Tricks section for applications and accessories, creating custom GEOS windows for your programs, and details about GEOS file format. Programs include a single-step simulator to display GEOS memory locations and registers in machine language, and a constant display digital clock. Optional diskette recommended.

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FIGHTING WORDS

The Jeff Minter Page

Greetings, my fellow blasters and zappers. I've nearly finished Revenge II now, and I'm getting ready to get well stuck in to Colourspace II on my ST . . . speaking of which, I've been asked to perform Colourspace in the Armagh Planetarium, which should be cool and hyper-groovey, they gonna turn me loose on their system with FIVE huge video projectors displaying on the dome itself, I can barely sleep nights for drooling! . . .

However, as usual, on to matters Commodorian, and specifically, the games market. I've never been a fan of the hyper-commercial style of game promotion that's current in the industry right now, and as usual I've blamed the system for all the evils in computerdom, and I've tended to think of 'the system' as being the breadheads behind the Great Marketing Machine.

There's more to it than that, though. The games market is a pretty dull place to be at the moment, and we're all a little bit to blame for its tediousness. Of course we're not as much to blame as the aforementioned breadheads, 'coz they're the ones who have indirectly shaped the market into its present form; but we're still to blame for being suckered into following their lead. Here's how we've done it:

First, there's you lot, the games-buying public. You're all awkward vermin in that you fall for the hype put out by the mega-companies, and also that you'll buy anything at all that's been licensed, whether or not the conversion is actually any good! I mean, I've seen perfectly dreadful stuff high up in the charts that's only got there because it purports to be either the home version of a famous arcade game, or to be based around some famous film or TV series. In the first case, the arcade license, you're quite likely to be disappointed anyway, because arcade machines these days contain stuff like megabyte ROMs, lots of sampled sound and 16-bit processors, and only simplifying the original game by huge amounts are you ever going to get anywhere trying to convert onto an overworked 64k machine. (Of course there is the odd occasion where the conversion does come through pretty well — I'm thinking in particular of Gauntlet, which, if you ignored the bugs (yes, US Gold, they are bugs . . . 'players may now walk off screen' indeed!) was a pretty good rendition of the original. Mind you, Gauntlet itself is based upon an old Atari dungeon game, so you're starting from an 8-bit concept anyway. The arcade game only used its extra hardware to embellish this basic design). Then there's the business of film tie-ins and the like . . . why do you all continue to fall for this blatantly obvious marketing trick? The only games based on films that come anywhere near capturing the spirit of the original material can be counted on the digits of one paw of an Arcturan Two-toed MegaSloth, and they're both running only on Atari arcade hardware; namely Star Wars and The Empire Strikes Back. If you're thinking that you can expect to see the essence of a multi-million pound epic flick captured by your humble '64, you're going to be disappointed, sunshine. It ain't going to happen. And don't tell me that Domark or whoever has the licence to Star Wars either — a lot of the atmosphere of the original game was created by stuff like lots of digitised speech, the fact that you sat in the booth to play, and the special Star Wars controller that gave you the feeling of actually flying an X-wing. (It just won't be the same with your old Kempston now will it?) . . .

You lot ought to see that this licensing lark is just a ploy to part you from your hard-earned/scrounged bread. The megasoftwarehouses know that if they pay enough bread for a given high-profile title, you lot will queue up, tenners in hand, and buy it anyway, just because of the name.

So wise up. If you want film titles, hire the video. If you want to play Space Harrier, go down the arcade. If you want true arcade quality stuff at home, buy an Amiga, but don't fall for all this hype and marketing, 'coz it's destroying the chances of more original stuff ever appearing, 'coz it's subverting the very programmers . . .

Selling their brains . . .

Yeah, us, the programmers and designers, we're as guilty as you lot are. We're caught in the same net. It's difficult for a new programmer to get anywhere with much original stuff these days, because he knows that somebody somewhere (probably at Elite or US Gold) is going to release a licensed product that'll outsell anything original just because of the name. And of course the major software empires keep their money-machine going by offering good bread for conversion hacks; so you end up with a load of talented programmers wasting themselves doing conversion jobs when they could be doing something original. I mean, that's fine if you're the sort of programmer who just gets a kick out of getting 32 sprites on screen over a multi-coloured smooth-scrolling backdrop and don't particularly care if the game design isn't your own . . . but where's the fun in that? Conversion work would drive me nuts. I know it — have someone else tell me what my sprites should look like, how many points per alien shot, how many lives? The very thought of someone else imposing their will on my designs makes me cringe . . . and it must be boring as hell not being able to put your own stamp of originality on the game . . .

But, of course, the sole motivation within the software market these days is money, so programmers and designers sell their brains to the highest bidders, and we get another round of conversions, and no-one does anything freaky any more, and the poor old gamer gets nothing original. (Of course it isn't that bad yet, but it's heading towards total ennui, believe me).

Maybe I'm just a mutant who'll never fit in . . . it's jut that when I started doing games, it was great to be in the industry; great to be out of 'the System' and in an exciting new field where you could be creative and make a living from it, too. Now it seems that the System has taken over even this young industry, with programmers working 9-to-5 in offices of software megacorporations producing copies of other people's games to strict deadlines . . . and we're playing into the hands of the breadheads, conforming, buying boring conversions, programming other people's ideas.

So think next time before you buy yet another Big Name Title. Do you really want yet another conversion? Wouldn't you rather get something more original? or have you been conditioned by the marketing men who've set up the whole deal to make themselves rich?

Right, that's all for now — it's 3.22 am and I feel like doing a little more programming. Something really weird . . .

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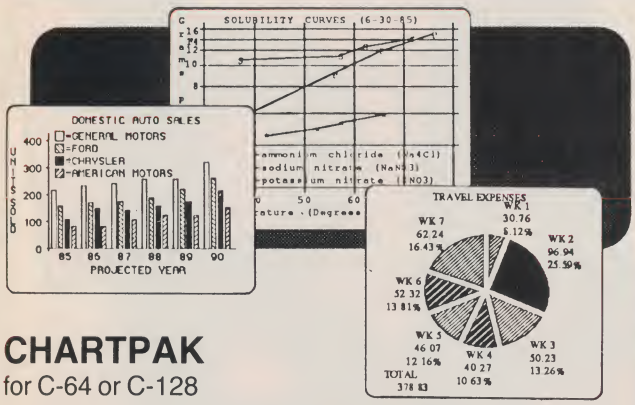

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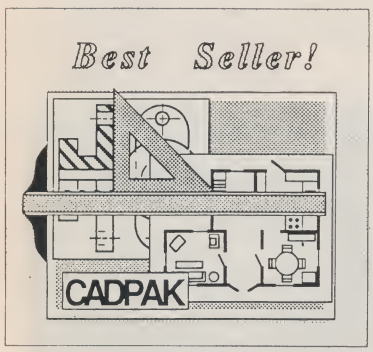

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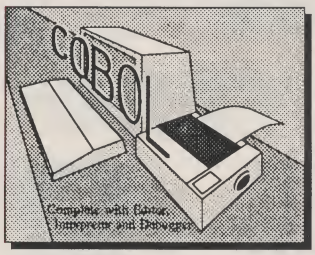

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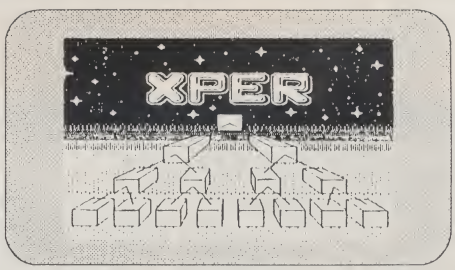

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BASIC for beginners

PART XII

This is unfortunately, the last in this series which began way back in February 1986. For the benefit of those readers who want to know what they have missed, here is a brief index of this series:—

CCI Issue

1 Feb 1986 *Synopsis:* Discussion and introduction to the BASIC programming language.

2 Mar 1986 *Synopsis:* Design of algorithms. Variable and string handling.

3 Apr 1986 *Synopsis:* Arrays — types and uses. *Garbage collection* and memory requirements.

4 May 1986 *Synopsis:* Loops and their control. Counting using *FOR-NEXT* and *DO-LOOP*.

5 Jun 1986 *Synopsis: Screen management and design. Usage of SPC.*

6 Aug 1986 *Synopsis: Direct machine access through PEEK* and *POKE. USR* and *SYS* calls.

7 Oct 1986 *Synopsis:* User defined functions — *DEF FN.* Logical operators and their use.

8 Nov 1986 *Synopsis:* Further discussion of logical operators. Files and input/output.

9 Dec 1986 *Synopsis:* File handling — The *PRINT#* command.

10 Jan 1987 *Synopsis:* Further file-handling using relative files.

11 Mar 1987 *Synopsis:* Direct-access programming of the disk drive.

I am reliably(!) informed by the Editor that all of these issues are available as back numbers — call to check the cost since this depends on which country you live in.

In the previous part of this series I mentioned that queries about string handling formed the bulk of your letters we have received on this series so I will look at this again, but first one of the *loose-ends* or topics that have arisen during the course of the series and deserve more coverage. I'll start with input routines because if these are not handled correctly then the rest of your program code is not going to work however good it is.

Consider the classical routine of obtaining a program input from the user:—

```
200 INPUT "Your NAME Please";A$
```

Notice how I have used upper and lower case letters in the line. Now you all know how to do this using the SHIFT key — but you all have probably experienced a program written in BASIC that was typed in one type of character set and by pressing the LOGO and SHIFT keys together, the graphics character set is then used. The resulting mess on the screen is not very assuring about the rest of the program. A way to overcome this is to disable the action of these two keys. This is done as follows:—

```
100 PRINT CHR$(8)
      REM Inhibit the CBM/Shift Key
200 INPUT "Your NAME Please";A$
```

The keys can be released by using CHR$(9) — refer to the ASCII codes in your *Users Manual* for your own machine to see the range of these commands. Do not be afraid to try out some of these codes, they are potentially very useful.

However, line 200 still has a few problems lying wait for the unwary programmer. If the user simply pressed the RETURN key then the string variable *A$* will not contain what is termed a *null-string* (in th words *A$ = ""*). The BASIC on the Commodore 64 has difficulty with these strings although later machines can handle them it is probably better to avoid *null-strings*. This can be overcome by writing the program like this:—

```
100 PRINT CHR$(8)
      REM Inhibit the CBM/Shift Key
200 INPUT "Your NAME Please";A$
300 IF A$ = "" THEN GOTO 200
```

This program still exhibits a number of shortcomings, not least the lack of protection from the user *breaking out* of the program by use of the RUN/RESTORE keys. The use of the POKE command will overcome this although this does mean that you will have to carefully study the *memory map* of your own machine since the address of this varies between different models. To make the input appear slightly more attractive to the user we could employ the asterisk character.

```
100 PRINT CHR$(8)
      REM Inhibit the CBM/Shift Key
200 INPUT "Your NAME Please
    *[CSRL CSRL CSRL]";A$
```

Note that *"[CSRL CSRL CSRL]"* means *left cursor key* three times.

We now have an input screen that appears with a flashing asterisk for the prompt. But what would happen if the user simply pressed the RETURN key — we would not have a *null string* but A$ would not contain an asterisk character. Thus a trap is necessary:—

```
100 PRINT CHR$(8)
      REM Inhibit the CBM/Shift Key
200 INPUT "Your NAME Please
    *[CSRL CSRL CSRL]";A$
300 IF A$ = "*" THEN PRINT "[CSRUP
    CSRUP]": GOTO 200
```

However, this would still allow the user to move the cursor out of the prompt line and around the screen thus creating a mess — so a mechanism to

keep the cursor within the prompt line is needed. I'll expand the above program and comment on each line:—

```
100 PRINT CHR$(147) : PRINT
    CHR$(8)
200 PRINT "What do you want to
    do?": GOSUB 1000
300 IF A$ = "Quit" OR A$ = "QUIT"
    THEN PRINT "[CLR]": END
400 PRINT A$ : GOTO 200
500 ..... rest of your program
600 .....
1000 A$ = ""
1010 PRINT "[RVSON SPACE
    RVSOFF CLR]":
1020 GET B$ : IF B$ = "" THEN 1020
1030 B = ASC(B$) : IF B > 95 THEN
    1020
1040 BL = LEN(A$) : IF BL > 20 THEN
    1060
1050 IF B > 31 THEN A$ = A$ + B$:
    PRINT B$: GOTO 1010
1060 IF B = 13 AND BL THEN PRINT
    "": RETURN
1070 IF B = 20 AND BL THEN A$ =
    LEFT$(A$,BL-1): PRINT B$
1080 GOTO 1010
```

The contents of the square brackets mean reverse video ON then the space bar, then reverse video OFF followed by the CLR/HOME key. Note the *safety net* of either version of "*quit*" being catered for in the line 300. Also note that you cannot have:—

```
300 IF A$ = "Quit" OR "QUIT" THEN
    PRINT "[CLR]": END
```

You must explicitly declare the optional inputs each time — I know it would be nice if the above line were possible, but unfortunately this is not so in Commodore BASIC.

The program really starts at line 1000 after being directed there after a screen setup routine where A$ is assigned to a null string. Line 1010 is a further screen handler while line 1020 initiates a GET loop waiting for a key to be pressed. B$ is then converted in line 1030 to an ASCII numeric value using the ASC function and assigned to numeric variable B. The ASCII value of the keyboard input is then checked for its numerical limits by the use of the numeric variable B. The reason why we are testing for an ASCII value beyond 95 is because these values represent graphical characters and not letter characters — refer to your ASCII table in the User Manual.

You can if you wish, test only for numeric input from the user by more closely specifying the range of variable B. For example setting the range to 48-57, not forgetting to include value 13 for the RETURN key and value 20 for the DEL key (refer to your ASCII table) will allow only numeric values.

In line 1040 we use another test — this time for string length using the LEN function. This uses the numeric variable BL to look at the length of our original keyboard input string, namely A$. Any value greater than 20 is directed to line 1060 where a comparison test is made. Note the use of the RETURN command on line 1060 to direct program flow back to line 300 — a GOSUB must always have a matching RETURN, in this case the original GOSUB was on line 200.

```
1020 GET B$ : IF B$ = "" THEN 1020
1030 B = ASC(B$): IF B > 95 THEN
    1020
1040 BL = LEN(A$) : IF BL > 20 THEN
    1060
1050 IF B > 31 THEN A$ = A$ + B$:
    PRINT B$: GOTO 1010
1060 IF B = 13 AND BL THEN PRINT
    "": RETURN
1070 IF B = 20 AND BL THEN A$ =
    LEFT$(A$,BL-1): PRINT B$
1080 GOTO 1010
```

Line 1050 should be looked at in conjunction with line 1030 where both lines are testing and numeric the numeric value of B. What we are looking for here is to see if the RETURN key has been pressed — this has the ASCII value of 13, or the DEL key has been pressed — ASCII value of 20. Thus line 1050 is saying that if the string variable B$ has an ASCII value within our specified range of 31 to 95, the latter being tested for in line 1030, then add it to the original string variable A$. At the same time the keyboard input is echoed to the screen for the benefit of the user. The final part of this line then returns to line 1010 to collect further data.

I discussed line 1060 earlier as being part of the loop from line 1040 and line 1070 demonstrates the use of the LEFT$ function. If the ASCII value of B$ is 20 (the DEL key has been pressed) together with a string length greater than 0, this line reduces the input string length by (BL-1). Remember that LEFT$ is structured so that the number of characters made available in the string are dependent on the value of the variable after the comma, counting from the start or left-hand end of the string. If we were using the RIGHT$ function then the starting point would be from the current end of the string or right-hand side. In this case, it is the value of BL less 1 since we have just used the DEL key.

The final section of this line then echoes the modified input to the screen and line 1080 completes the program by looping back for further input until the RETURN key is detected. The above routine is a simple, general-purpose program to show how to handle strings in static and dynamic form — that is where the string contents can or cannot be accurately forecast.

The following program demonstrates string contents that are predictable and are used in an optional selection program.

```
100 PRINT CHR$(8): PRINT CHR$(147)
200 PRINT "Option ONE : PRESS '1'"
300 PRINT "Option TWO : PRESS '2'"
400 PRINT "Option THREE : PRESS '3'"
500 PRINT "Option FOUR : PRESS '4'"
600 PRINT "Option FIVE : PRESS '5'"
700 PRINT "Option SIX : PRESS '6'"
800 PRINT "Option SEVEN : PRESS '7'"
900 PRINT "Option EIGHT : PRESS '8'"
1000 PRINT "To QUIT : PRESS 'Q'"
1010 PRINT: PRINT: PRINT "Press ANY Key for Menu Option."
1020 GOSUB 1050
1030 FOR I = 1 TO 1000: NEXT
1040 GOTO 100
1050 FOR I = 1 TO 10: GET A$: NEXT
1060 GET A$: IF A$ = "" THEN 1060
1070 IF A$ = "Q" THEN PRINT CHR$(147): END
1080 B = ASC(A$): IF Z < 49 OR Z > 57 THEN THEN 1050
1090 ON B - 48 GOTO 2000,3000,4000,5000,6000,7000,8000,9000
2000 PRINT "Option ONE Selected": RETURN
3000 PRINT "Option TWO Selected": RETURN
4000 PRINT "Option THREE Selected": RETURN
5000 PRINT "Option FOUR Selected": RETURN
6000 PRINT "Option FIVE Selected": RETURN
7000 PRINT "Option SIX Selected": RETURN
8000 PRINT "Option SEVEN Selected": RETURN
9000 PRINT "Option EIGHT Selected": RETURN
```

There are a lot of similarities carried over from the original program into the above program. I don't feel it is necessary to fully go through this one since there is nothing dramatic in there and you should be able to follow it provided you have worked through the first program.

However, there are many enhancements that an enterprising programmer could add. For example, you could use colours for the screen, border and characters — what about using a flashing border or characters for an input error? The menu itself would look much more interesting if the TAB function was used to stagger the lines — similarly you could add a sound that confirms that a key has been pressed. These are all simple ideas that distinguish a good creative programmer from a mediocre one and I'm pretty certain that regular readers of this series are strongly interested in becoming the former.

Well that is it. I sincerely hope that all of the effort that has gone into this series has started some of you down the road of BASIC programming. While there may be many moments of frustration with "*SYNTAX ERROR IN...*" or "*RETURN WITHOUT GOSUB ERROR IN...*", don't worry too much for it is highly unusual for a program to run correctly the first time, if at all. However, if you have experienced that immense feeling of pleasure and satisfaction when **YOUR PROGRAM** works correctly then you know why learning to program is well worth the effort. The feeling is identical to that when you suddenly find yourself riding a bicycle without falling off or starting to swim without sinking into the water — it all suddenly seems so easy and you wonder why it seemed so hard. Computers are here to stay and an investment in your time learning to program is an investment in your future — don't ever lose sight of this and keep programming.

B.D.

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Feature

Mini Office II

The Perfect Package

Reviewed in CCI May

Mini Office II is a comprehensive suite of business programs for the Commodore 64/128. The suite incorporates Word Processor, Database, Spreadsheet, Graphics, Communications, and a Label Printer. The disk version allows movement between the separate modules via a main menu and all of the modules are loaded using a disk turbo. Side 2 of the disk holds file conversion programs to convert Mini Office files to be compatible with Mini Office II. Also there is a demonstration Database file on the second side.

We followed the creation of this excellent 'home productivity' package from its beginnings and felt there was no better commentator than Richard Franklin, who wrote the majority of it, to tell CCI readers how it came about, how the problems were overcome and the advantages it has for users.

The Problems writing a Package such as Mini Office II

The first thing to consider when writing any professional piece of software is what language to write it in. The main choices to consider are Basic, or Machine code, and more recently 'C' (which is becoming a much more popular language these days). Other languages such as Pascal are not really suitable for these type of programs as the file handling facilities are rather limited (not very good for, say, the Database program), and apart from that, compiled programs tend to produce rather long object code and that again would not be suitable for such programs. This rules out Pascal and 'C'.

This leaves me with the two main choices, and Basic, being rather slow and unsecure, Commodore Basic in particular (machine code routines would have to be written for error trapping etc.), can also be ruled out. This left me with just one choice, the trusty Machine code.

Machine code programs can be very fast when written properly, but can cause hours of hair pulling trying to find that elusive bug although the routine looks perfect.

So, having chosen the language to use, I then had to make the choice as to what Assembler to use. My choice was between Mikro 64 and the Commodore Assembler Development package. Mikro is a handy assembler to have but for large programs it can be a problem as the cartridge knocks off 8K of the area you can assemble to. Another problem with Mikro is that each source file is loaded into memory and then processed and for the same reason about memory you would have to keep the source files small.

The Commodore Assembler gets round that problem by assembling from the disk back to the disk. Therefore, all memory available after the assembler has been loaded can be used for the symbol table which is very large on some of the programs (the Database program assembled to about 25K).

The source files are read from the disk sequentially and are assembled directly, and on the second pass, an object file is written back to the disk. All of this disk access would slow down any computer and with the notoriously slow disk drive speed of the 1541, assembling takes a very long time (enough time to put the coffee on, walk the dog and still be back for the 2nd pass).

The main problem with the Commodore Assembler, which is not found in Mikro, is that it will only allow access to disk drive device 8. Therefore, all source files and the written object file (generally 2.5 times larger than the final program file) must fit onto one disk. This proved to be impossible with the Word Processor, Database, Spreadsheet, and the Graphics programs.

To cure this problem, either get a dual disk drive (4040 or like) or a single disk drive with a larger storage capacity, and an interface such as Interpod or the Brain Boxes IEEE interface. In a previous job as Technical editor of CCI, I regularly worked on a 4040 through Interpod. This proved very useful as I could have direct access to twice as much information, but, although the 4040 is a parallel disk drive, the data is converted to serial through Interpod. For the cost of 2K of memory, the BB IEEE gives parallel data transmission and so allows you to use the full speed of the disk drive.

I could live with the loss of 2K of memory, but for the disk drive, I chose the CBM SF1001 which is a single drive unit with 1M storage capacity. The configuration of the SFD1001 going through the Brain Boxes IEEE interface speeded up assembly by about 4 times and there was the added bonus of faster loading and saving of source files when editing. Also I only needed one disk to store the source for all of the programs that I wrote. The BB interface also includes a Centronics printer driver and I was able to list my source to a faster printer (the Mannesmann Tally MT80).

Editor

For editing the source files, I didn't use the editor that comes with the assembler because of the lack of function keys and the limited number of added commands. I used instead a program called SYSRES (obtained about four years back). I have never found a programmers utility to rival Sysres. Not only does it allow the function keys to be defined, but the normal keys used in conjunction with the LOGO key as well.

Another nice feature of Sysres is the bi-directional scrolling of a program file by use of the cursor keys. This means that the LIST command is rarely needed. This, along with the large arsenal of added commands for editing the files, and the fact that there is no loss of program space with Sysres loaded (the

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CONTINUED FROM PAGE 24

majority of the code sits behind the Basic ROM) was a real boon.

So, armd with these items and one of my books, The Commodore 64 ROMs Revealed, I was ready to attempt this task (I had never written anything of this scope before). I needed to decide on where the programs would reside in memory and the choice was very simple. I would put the code from $8000 onwards and make it simulate a cartridge. With the screen moved up to the $C000 block of memory, I had a full 31K memory pool for data storage and still plenty of room for the program, using the RAM behind the Basic and Kernal ROM's and behind the I/O area.

One of my problems with having code (or data) behind the ROMs was the continual need to switch the ROMs in and out (some of the programs use the Basic ROM's arithmetic routines). It became quite a joke later on in the development, for me to mention to the department head that I was suffering from a weird bug, for him to suggest whether the ROMs were the problem. In most cases he was right (A Beeb and Amstrad programmer, definitely NOT a CBM programmer).

Other problems were to do with the Kernal ROM's routines:

The input routine had to be made to suppress cursor up and down from causing the whole screen from scrolling. To do this I re-wrote the routine to allow input only on one line and to a specified length, cursor up and down were either ignored or, in the case of the database, caused an exit with the corresponding key for re-use (Up or down a line when editing the records). Also the STOP key was made to exit the input routine (a major failing in the ROM version).

Later, by Carl Graham, who wrote the Spreadsheet, a problem was found with the Cassette data file routines. Basically, the tape routines will read a Zero byte as the end of file (except as the first byte of the file). This caused trouble as numbers were being written out in their packed format (0 is stored as five zero bytes). Where this was necessary, turbo routines were used to substitute the Tape routines (Database, Spreadsheet, Graphics, and Label Printer).

Problems with the serial (disk) ROM routines are that, on occasion, they cause the computer to hang. The best way to demonstrate this is to try this without a disk drive connected:

```
10 OPEN 15,8,15:GET#15,a$
```

This will cause the computer to hang and can only be exited by RUN/STOP RESTORE. Unfortunately, there is no way of testing whether the disk drive is present if you want to read the error channel. Detecting the disk drive will destroy the error message you are trying to read.

Most of these problems have been overcome, but the problem with the disk routines is still there and can be tested by anyone who has a copy of Mini Office II by entering the DOS command section and pressing return (without a disk drive).

In all, Mini Office II took over one and a half years to develop with all of the programs including the disk and tape security, with the exception of the Spreadsheet and the Graphics programs, being written by myself. I hope that you, the users, will find Mini Office II easy to use and comprehensive enough for your needs.

The Communications Module

The Mini Office II disk or tape comes with two versions of the communications program. The first (User port version), available from the main menu on the disk version, works using the built in RS232 routines to a standard modem through a suitable RS232 interface. The second version has been written specifically for the COMPUNET modem. The reason for the COMPUNET version not being available from the main disk menu is that the main menu and the other programs will not work with the COMPUNET modem present.

Both communications programs are scrolling terminal types and will not handle Viewdata format.

The two versions operate in exactly the same way except that the COMPUNET version works in 1200/75 baud only and has options for dialling and dropping the line. The user port version on the other hand can only handle systems where the transmit and receive baud rates are the same (up to a maximum of 2400 baud). Receiving information at a rate greater than or equal to 1200 baud is not reliable due to the RS232 driving routines being in software.

All parameters for controlling the way that the data is transferred between computers can be modified to suit the requirements of the system being used. There is no need to worry about calling standard ascii systems as the data is converted to standard ascii when sent and any data received is converted to Commodore ascii for displaying and storing in the buffer. The exception being that files transmitted or received in Expanded Ascii format will have no conversion performed.

Expanded ascii is the file transmit protocol used on MicroLink for programs and other non-ascii data (such as weather maps). Each byte of information is sent as two characters being the hexademical notation of the byte (for example 123 decimal is sent as 7B). Most data on MicroLink, including the weather maps are for the BBC micro and I will try and supply for publication a program that will convert BBC hi-res screens to Commodore format and display them.

For convenience sake, there is an option to turn on a three line window at the bottom of the screen. When this window is enabled, all data received will be displayed in the top 21 lines and any data sent (from the keyboard or the buffer) will be displayed in the bottom 3 lines. This can be very useful for typing ahead on a bulletin board or such, as normally data sent is echoed back mixed in with anything already being received. This would also prove useful when accessing a multi-user adventure game.

Buffer Operations

All buffer operations are performed through the 31K memory buffer and if when receiving a file the buffer becomes full, an XOFF character is sent to the remote computer and the user is informed of this. In this way, receiving a long file can be done by filling the buffer, exiting and going to the buffer options menu to save it, clearing the buffer, re-entering the chat mode, turning receive file on, and sending an XON (Ctrl-Q).

The software has been designed so that, if required, it will also respond to XON and XOFF characters received through the modem.

Both ascii files (data on tape or SEQ on disk), and program files (excluding the load address) may be loaded into the buffer for transmitting. Received files may be saved as data or program files. The program files may be saved as Basic (load address of $0801) or as Binary (input the load address in Hex).

Finally, the buffer may be printed or viewed to screen. All Mini Office II programs support Commodore MPS printers and Epson via the RS232 port (2400 baud). All programs except the User port comms also support Centronics Epson compatible printers. The Centronics driver is built into the programs and runs through the user port on an Acknowledge protocol (not BUSY as in the Stack interface). The reason for the lack of Centronics printer option in the user port communications program is due to the fact that the user port will already be occupied by the RS232 interface.

Next month I will be outlining the abilities of the Word processor, Database and Label Printer programs. These are all integrated to a degree as the Label Printer prints from Database files and the Word Processor allows mail merge from Database files.

R.F.

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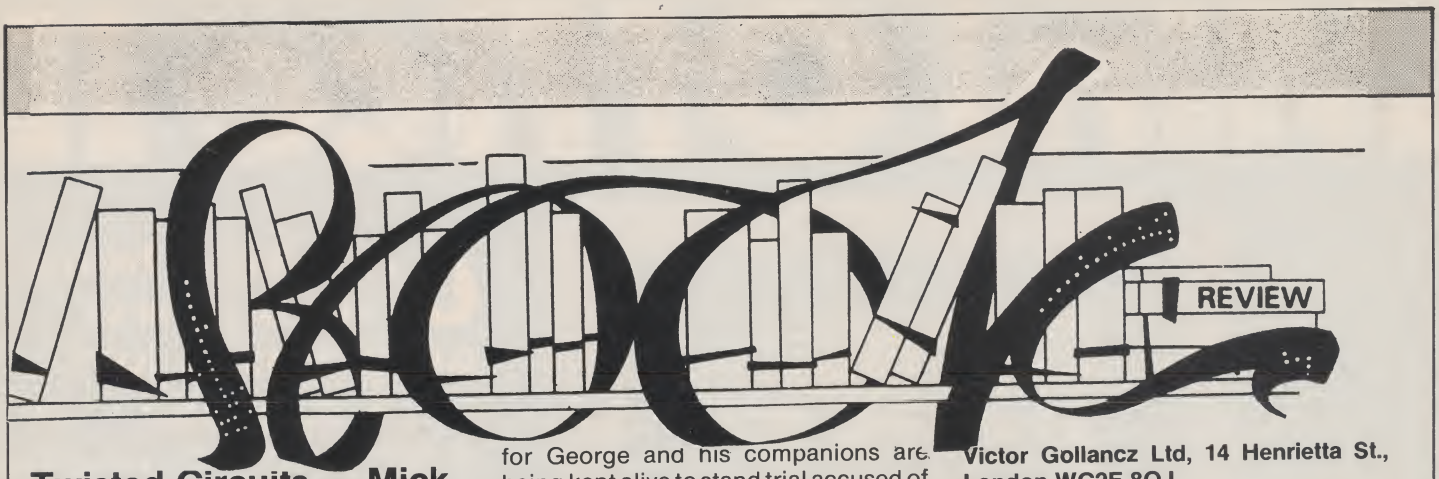

Twisted Circuits — Mick Gower — Beaver Books — £1.75

'Twisted Circuits', edited by Mick Gower, is published by Beaver Books, the children's fiction imprint of the Arrow publishing house. It's a sinister collection of fairly ingenious 'Hi Tech' short stories concerned with computers, the youngster who use them and what can happen when the computer — not just the programs — deviate from the norm. Dragons appear out of one screen, a computer 'brother' is demanded by another and yet a third one wants to get married to the-girl-(computer)-next-door!

The stories are by authors who are, as yet, not well-known in the science fiction world (and on this showing one or two of them may well remain so), but they are, on the whole, competently written and hold the attention of the reader.

If you have (or are), a 9-13-year-old whose main interest in life is playing games on his/her computer to the exclusion of everything else, then 'Twisted Circuits' could be the book to buy. The stories in it might just make you, or them, think 'What if . . . ?', and at £1.75 it won't break the (pocket-money) bank, either. **D.M.**

Beaver Books, 62-5 Chandos Place, London WC2N 4NW.

This Is The Way The World Ends — James Morrow — Victor Gollancz Ltd — £10.95

Tombstone engraving is not usually the kind of employment associated with the hero of a novel, not even science fiction novels where anything can happen and often does. But that is George Paxton's trade in 'This Is The Way The World Ends' by James Morrow.

George's wife and child die in a thermo-nuclear holocaust in the not-too-distant future and he and five other characters — military and civilian experts involved in the war who, like George, have managed to survivie it — are taken aboard a submarine and nursed back to something resembling health. Unfortunately, the submariners prove to be less altruistic than they at first appear, for George and his companions are being kept alive to stand trial accused of the extermination of humankind.

The prosecutors are representatives of the 'unadmitted', the mass of humanity that will now never be born and who accuse George as one of those 'watchers' who stood by and let it happen.

'This Is The Way The World Ends' is a novel on three levels. On the surface it can be read as a straightforward sf story, albeit one that is a cut above the general run. Underneath that — the second stratum, so to speak — is a strong, satire on the defensive/offensive posturing of the super powers and then, running through it all, is an anti-nuclear plea which, even if you don't agree with the author's stance, will make you pause for a great deal of thought.

George Paxton is a likeable, ingenuous hero with whom most of us can identify. His desire for a scopa-suit — a protective coverall supposedly proof against radiation — for his little daughter, Holly, leads him into signing a contract admitting his share of the guilt should nuclear war ever occur. Naturally, no-one thinks it will ever happen . . . George's gradual realisation of his plight, his growing affection for Morning Valcourt, a psychotherapist assigned to help him overcome his 'survivor's guilt' and the friendships he forges with his fellow defendants all help the story towards the final 'showpiece' trial, in which the outcome seems inevitable but never quite certain. Also weaving in an out of the fabric of the story are Nostrodamus (yes, the 16th-century astrology), a giant vulture and a Mad Hatter (no, not that one!), whose shop can fly wherever the fancy takes him or it.

A less well-written story would be totally unvelievable but in James Morrow science fiction has found an author whose descriptive passages are a delight and who knows how to pace his narrative. Combine these with his ability to make the reader care about what happens to the characters — the mark of the true story-teller — and you have a new name to add to your list.

The title is, of course, taken from T. S. Eliot's 'The Hollow Men' and the quotation ends 'not with a bang but with a whimper'. James Morrow, in his book, shows another view of how it could reach the final curtain. Read it and find out. **D.M.**

Victor Gollancz Ltd, 14 Henrietta St., London WC2E 8QJ.

Science Fiction Stories — Tom Boardman Jnr — Octopus Books — £1.99

A recent survey showed that only about 25% of the great British public brought a book in 1986. (Have you noticed how many bookshops there are in countries like France and Spain?) It didn't say why so few people paid out hard cash for something that can give so much pleasure for so long but, probably, the cost played a large part. When the average price of a good read is now approximately a tenner, it's cheaper to borrow the book from your local library. Although, of course, the disadvantage of that is that you have to return it in three weeks when often you'd like to keep it.

Some publishers are now waking up to the fact that cheaper prices mean more sales, Octoput Books are one of them. They are now publishing a series of hardbacks — not the usual paperbacks, which get tatty so soon — which are not only pleasant to handle and good to read but are also astonishingly inexpensive. Included in the series is 'Science Fiction Stories', edited by Tom Boardman Jnr, and priced at only £1.99! (Mastertronic, are you listening?)

The shortest story is supposed to be the one that goes, "The last man on earth sat alone in a room. There was a knock on the door . . ." Frederick Brown's taut little tale based on those two sentences is only one of the twenty-three stories in this collection. It also includes Isaac Asimov's, 'The Fun They Had', the classic 'Who Can Replace A Man', by Brian Aldiss and even H. G. Wells' 'In The Abyss'.

For aficionades of the genre it's an opportunity to renew acquaintanceship with the masters and perhaps to re-read some of those gems which may have slipped your memory. For anyone new to science fiction £1.99 is a very small sum to spend to introduce either yourself — or someone else — to the pleasures of space/time travel, telekinesis, friendly, or unfriendly, aliens and, of course, almost-human robots.

An anthology to be treasured and, at this price, it's almost a giveaway! **D.M.**

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News Feature

WIDEBAND COMMUNICATIONS — THE NEW HIGH-TECH GOLDMINE

The wideband communications market is pushing past the $3 billion level this year in the U.S., and is projected to pass $7 billion in 1990. According to a report from International Resource Development, the burgeoning market has become a "happy hunting ground" for new high-technology companies, who are leaving many traditional telecom suppliers "in the dust". "Some of the big high-tech opportunities of the 1980s, such as personal computers, have already peaked or passed, but wideband is just now revving up," says C. Thomas Rush, project manager for the new IRD study.

Supplier Push Strong; User Pull Weak

While the US wideband market is growing very rapidly, it is dominated by supplier push rather than user pull, says the IRD report. For example video conferencing, which "really gobbles up bandwidth", is growing rather slowly. The T1 and VSAT segments, by contrast are growing rapidly as communications users figure out how to save money by using wideband digital communications rather than bundles of leased voice-grade lines.

Startups Challenge Leaders in Every Sector

According to the IRD report, the major U.S. supplier of both wideband equipment and wideband services is AT&T, which is active in 13 of 17 wideband market segments covered by the report. But in 16 of the segments, recent startups are mounting strong challenges to the market leaders, and the competitive pressure is leading to rapid product obsolescence and "more price pressure than most vendors would really like to see".

Long-standing vendors such as Western Union and RCA/GTE are "Sucking their teeth, worrying about empty transponder capacity", according to Rush. The T1 multiplexer market, with more than 15 small-company participants, has become a "rat race", despite falling prices and razor-sharp profit margins, most vendors see the future of T1 as "just too promising to walk away from".

Japanese Equipment Vendors Challenge — And Are Challenged

Unlike the consumer electronics market in the US., which is already totally dominated by far-eastern vendors, the wideband communications equipment mostly still has "Made In The USA." stamped on it. There are significant Japanese challenges in fibre-optic equipment and microwave gear, and also in image-related equipment such as wideband facsimile. But Nippon Electric's worldwide strength in microwave equipment is about to be challenged in turn by "some fancy new digital microwave long-haul gear from AT&T Network Systems", and US suppliers of fibre-optic transmission equipment are "upping bandwidth faster than the Japanese can keep up with", according to the report. In video codecs, "it's a horse race; US-based Pictel and CLI are coming along OK, but a strong product from NEC may soon be joined by challengers from Mitsubishi and Matsushita", according to Rush.

DATABASE SERVICE GROWTH

The online database services market will reach a revenue level of $1.9 billion in 1986, and will more than double over the next five years. According to a new 177-page study by market research firm International Resource Development Inc., all major segments of the market will show strong growth, with particularly good prospects for financial and econometric databases. "Corporate librarians are getting big appetites — and fatter budgets — for accessing information online from terminals and personal computers," comments Jean Buffham of the IRD research staff.

Fewer Dropouts Forecast

"There have been so many entries and departures into and out of this market over the past ten years, but we're seeing more caution now on the part of vendors" says Buffham, who sees "a little sober and realistic approach" by new aspiring database vendors. The report traces the development of particular successful product combinations of price, presentation and detail, in both electronic and pater-based publishing. "It's obvious that print publishers have a clearer idea of what they can sell, and at what price than the electronic publishers," Buffham points out.

"Some database publishers see CD-ROM as an opportunity, but more of them view it as a threat to online revenues; what's more, they don't know how they're going to get usage-sensitive 'meter-click' pricing from databases distributed in CD-ROM form."

Little Impact on Print

Despite the expected rapid growth in electronic information vending, relatively little impact is seen on traditional print-based publishing. "A few specialized directories will fall by the wayside, to be replaced by electronic equivalents, but we really don't see a devastation of the traditional newspaper or yellow pages industries," says Buffham. She sees consumer electronic news services, such as those offered by CompuServe of The Source as 'more immediate than newspapers, more than television, but not threatening the position of either one."

According to the IRD report, pricing for home services has often in the past been dependent on advertiser-supported services. It has become clear that advertisers are not willing to support services that do not have a sufficient number of users. So it is the information and the packaging of that information that is crucial to the development of electronic products geared toward the home.

The price of services, including hardware, software and peripherals will have to come down in order for more home users to take advantage of services such as videotex.

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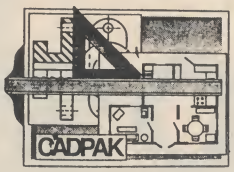

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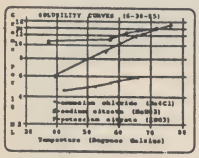

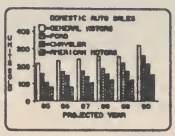

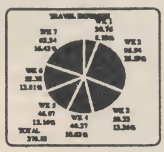

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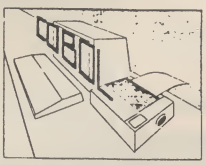

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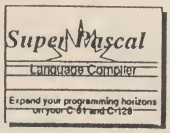

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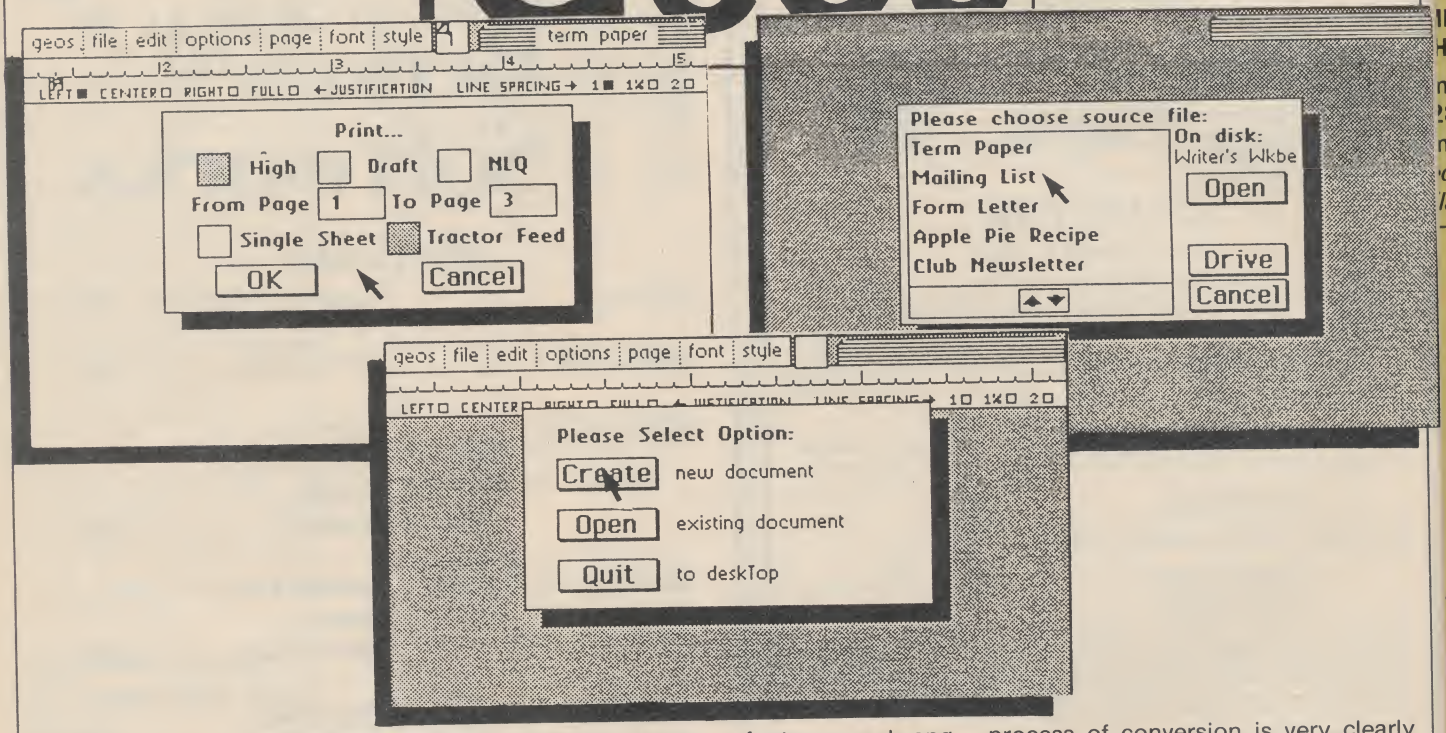

They keep on coming. The marvellous Geos range goes on increasing and improving. We have already covered such recent goodies as their new fonts and deskpack. Now they have produced what for me is even more exciting a specialised writer's Geos. The first Geos contained an excellent word processing package — geoWrite but this new package contains an updated and improved version which is considerably better.

It also contains geoMerge which is a very acceptable mail merge facility. There is also Text Grabber which lets you add from other word processors. And there is a facility that is not very useful to most people — geoLaser a printer support to use with the Apple Laserwriter printer. Not many of us have one of those for home use!

The enhancements for geoWrite include: format each paragraph individually; centre, right and full justification; single, one and a half, and double spacing; decimal tabs; move around a document using cursor keys; selection of up to a whole page of text; double clicking to select a word; superscript and subscript; print in high, draft or NLQ modes; print part of a document; headers and footers; put the page number, time and/or date into the header or footer; search and replace.

GeoWrite is really a very neat word-processing system that like all Geos facilities is icon and window-based. This makes it exceptionally easy to use and with the new enhancements a highly effective system for anyone who wants to use the 64 as a work tool. It is at least as easy to use as any word-processing package I have come across and provides an ideal starting point for a beginner as well as something that could serve for the advanced user too.

GeoMerge

GeoMerge is a program that lets you produce multiple copies of a document such as a letter that you might send to many people. Each copy however can have different names on it and, of course, also addresses or any other data you wish.

Text Grabber is really to expand the facilities offerd by geoWrite. With it, you can take a file created on any other Commodore word processor such as Paperclip or Vizawrite, and convert it into a geoWrite file. The formatting directions from the original word-processing package will be preserved when the conversion is made to geoWrite. The process of conversion is very clearly explained in the excellent manual that comes with the whole package.

The other facility on this package is unlikely to benefit many 64 owners outside the US. GeoLaser is a tool for producing near professional quality typesetting style text using the Apple LaserWriter Printer. As the cost of this printer runs into thousands of dollars or pounds, it could be an expensive way of getting your letters typed at home. In the USA, Berkeley Softworks, the creators of Geos, offer a laser printing service accessible over Quantum Link — the US communication system equivalent to the Micronet or Compunet systems in the UK, called videotex in other countries. Perhaps Berkeley or their local agents in other countries will introduce a similar system outside the US which would be very useful indeed for people who want really high class printing.

Overall this new package is an excellent addition to the growing range Geos offers. It is as easy to use as the previous packages and will undoubtedly prove equally as popular as this whole system which is adding power to the 64 without costing a great deal of cash.

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C128 RAM Expansion Module

One the strongest, yet often overlooked feature of the Commodore 128 is the ability to expand the memory. However, since the processor used in the 128 is an 8-bit device, this means that it can only directly address 64K or *see* only one 64K memory block at a time. The system will support up to 15 blocks or *banks* of 64K per bank which means a maximum of 896K external RAM that is indirectly addressable. This technique of expanding the memory by means of *bank-switching* was first seen in the now obsolete B-series (or 700 series as it was known outside the USA) which used the much underrated 6509 processor. The next application was probably closer to the majority of readers of this magazine in the shape of the PLUS/4. This machine used the 8501 processor and allowed bank-switching of 32K blocks into the processor address space.

Commodore have launched two versions of a RAM expansion module for the 128 machine — the 1700 which contains two banks of 64K adding a further 128K to the standard machine to give a 256K Commodore 128, or the 1750 module (reviewed here) which contains eight banks of 64K which adds a further 512K RAM which turns the 128 into an extremely usable 640K machine.

The package consists of the RAM expansion module, two disks and a 24 page manual. The two disks contain a new CP/M 3.0 system which recognise the additional RAM and support this as a *virtual* or *RAM disk*. The disk is the latest version to be released by Commodore (6 Dec 1985) and also includes support for a modem. The other disk contains some programs written in BASIC 7.0 and provides some demonstrations of the facilities in addition to a rather silly RAM-Test program. I felt that this was a pointless program because if it does reveal a section of defective RAM, what are you going to be able to do about it since the program does not indicate which particular RAM circuit is at fault?

The standard of Commodore documentation is definitely improving and the manual is very good. Full technical details of the RAM expansion are provided with address location and function of the controlling registers as well as a detailed guide for new users in either Commodore BASIC or CP/M 3.0 modes.

Upgrade to 512K

The RAM module is produced at Commodore's Braunschweig factory in West Germany and unlike previous cartridges from Commodore is held together by a push-fit and access is quite simple — perhaps they now realise that this reviewer ALWAYS opens up any hardware! The board itself is very heavily shielded for RFI (Radio Frequency Interference) purposes, presumably to meet the FCC standards necessary in the USA — a cynic would say that after the debacle of getting the AMIGA Sidecar unit through the FCC tests. Commodore West Germany were taking no chances!

The RAM circuits themselves are 41256 units thus it should be possible for purchasers of the 1700 128K module to upgrade to 512K after re-configuring a jumper on the circuit board. Controlling the RAM circuits is done by a customised DMA (direct memory access) controller circuit — for the benefit of those readers who are primarily interested in the hardware, the controller indent number is 8726.

In use, the RAM module is very much a mixed blessing. When used in BASIC 7.0 mode, that is employing the 8502 processor the various support calls as *fetch, stash,* etc., seem very slow particularly in *slow* mode. One of the demonstrations on the supplied disk attempts to emulate the renowned AMIGA *'bouncing ball'* piece using BASIC 7.0 in 40-column display mode and therefore uses *slow* mode, is both frustrating and an embarrassment in terms of the time it takes to configure. 6502 assembly language is the obvious answer if you intend to use graphics with any level of plausibility. Until some enterprising software house brings out a *toolkit* utility that allows BASIC programmers the opportunity of high-resolution graphics in 80 column mode (yes, this can be done and the result in a resolution of 600 by 200 pixels are excellent), then there are serious limitations in using the RAM module with BASIC graphics. One area in BASIC that seems to offer more potential is that of sound, since some very large pieces of music can be stored in 512k. Another potential use could be in the creation of a RAM disk.

CP/M Plus

The only immediate use I could make of the RAM module was in CP/M mode. The CP/M 3.0 (or CP/M PLUS as it is sometimes called) supports *bank-switching* allows the user to configure the additional RAM a *virtual disk*. This means that the operating system treats the RAM as a disk drive — in this case *driveM:* and it is in CP/M mode that the benefits of the RAM module become apparent. Using the 512K module allows the user to place a completely full floppy disk into the RAM disk and still have room to spare, thus using an application such as dBASE II is considerably accelerated. For example, the complete dBASE II system disk can be copied into the RAM disk thus freeing drive A: for other purposes. The user should always remember to recover any data from RAM and save it to a floppy disk before shutting down the system. However, placing the system disk into RAM makes life much more pleasant — I do exactly the same thing on my AMIGA system. Other disk-intensive CP/M applications such as WORDSTAR and compliers can make great use of this welcome facility.

Although the supplied manual provides the programming details of using the RAM module from 6502 assembly language, prospective CP/M programmers will need the CP/M programmers Manual and system source code disk before they can get anywhere. These should be available from Commodore and represent a very useful source of information as well as being excellent value for money.

In conclusion, the RAM modules for the Commodore 128 do provide a platform for some very useful applications, particularly when used in a CP/M environment. However, until 6502-based commerical software is made available that takes advantage of the RAM modules, then their use is somewhat limited. The type of software I have in mind here is SUPERSCRIPT which would allow much longer documents to be created or SUPERBASE which could operate more efficiently. Maybe software producers such as Precision Software, JCL Software, Timeworks and Viza Software will not be slow to exploit the possibilities offered. I understand that JCL Software Ltd. have some assembly language that takes advantage of these modules and interested programmers should contact this company direct for further details. **B.B.**

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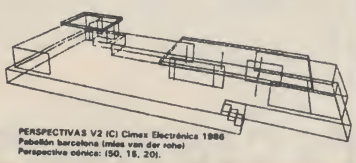

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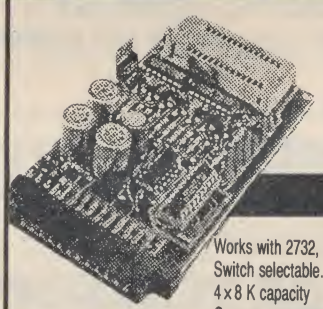

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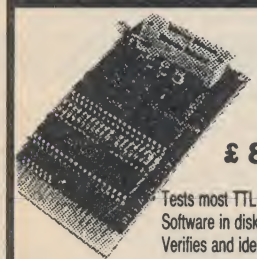

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Commodore 128 RAMDOS

The introduction of the Commodore 1700 and 1750 RAM Expansion Modules provide an additional 128k and 512k respectively of RAM for the Commodore 128. I made the comment about the limited use of these. At the time of writing the review the only direct application for which I could utilise them was as a RAM disk or *virtual drive* for CP/M. In terms of native Commodore 128 mode there seemed to be no alternative other than programming an application yourself. Obviously someone else decided that this was not a particularly attractive idea and has come up with a utility which makes use of the additional RAM.

Systems Software Oxford Ltd., the people who brought out *PETSPEED, Oxford PASCAL* and *HACKER* have considerable experience and knowledge of Commodore 8-bit hardware and this is their latest product. The package consists of a protected disk in 1541 format and a 9 page manual. Using RAMDOS will give the user a RAM disk which give 52 free blocks with the 1700 128k RAM expansion module and no less than 2048 free blocks with the 1750 512k module.

The copy protection used is the usual one employed by Systems Software Oxford and relies upon the software randomly selecting a colour and prompting the user for the colour name which is taken from a hand-held matrix card.

The most interesting command available is the *ALLOCATION* feature. This allows the user to specify the bank into which RAMDOS is to be loaded. This is of particular importance to assembly language programmers who need relocatable code. The method of operation of RAMDOS is one of re-direction of vectors. The *OPEN, CLOSE, LOAD, SAVE, GET* and *PUT* commands are redirected in high memory. Thus an assembly language routine would employ the usual methods as those for a physical device. This would be to set the system variables for the current logical address at location $B8, device number at location $BA, secondary address at location $B9, length of the file's name at $B7, the address of the named file at $B3, the bank to which the file is located at $C7 and finally the file name string itself. The only remaining task is to jump to the KERNEL *OPEN* routine at $FFC0, carry out the job and call the *CLOSE* routine at $FFC3.

Another interesting feature of RAMDOS is where the system has had a warm reset or when RAMDOS has for one reason or another lost its links with the operating system.

The command for copying a physical disk file to the virtual disk requires the file type to be appended, as shown in the second example. The file types would be **p** for a program file, **s** for a sequential file and **u** for a user file. No the use of the ampersand (&) to distinguish between the different types of drive.

In use I found RAMDOS to work with no problems. The only real problem revolves around the availability of applications software to operate with RAMDOS. At the time of writing there are no spreadsheets, word processors or databases that can utilise the *virtual disk drive* which RAMDOS offers.

I mentioned the limitations of using the RAM expansion for BASIC programming in my review of the RAM expansion modules — it is simply too slow, particularly where a graphics application is used. This means that if you intend to program purely in BASIC then RAMDOS is probably a good idea since it is going to use memory that otherwise would be redundant.

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TOP TWENTY

Chart Chatter
Practically all change this month with a new 64 chart topper Ocean's Arkanoid that has shot to number one. Gunship has climbed a place and Bulldog's Feud has entered at number three as the leading budget game. Hewson's Rana Rama looks a contender for top place. Mastertronic's Storm has blown up to top the C16's. Winter Events is hanging in there still at number two. Beau Jolly has a new entry at five. Tynesoft's European Games re-enters at six while Gremlin's Future Knight climbs a place to eight and looks like rising higher.

C64

	GAME TITLE	COMPANY		Price(£)	Rating
1	Arkanoid	Ocean	↑	8.95	Crisp
2	Gunship	Microprose	↑	14.95	Mega
3	Feud	Bulldog	★	2.99	Mega
4	Elite 6 Pack	Elite	★	9.95	T.B.A.
5	Ollie and Lissa	Firebird	★	1.99	Iffy
6	Marble Madness	Ariolasoft	★	9.99	Mega
7	Indoor Sports	Advance	★	8.95	Mega
8	Bomb Jack 2	Elite	★	9.95	T.B.A.
9	Ranarama	Hewson	★	8.95	Crisp
10	5 Star Games Vol. 2	Beau-jolly	★	9.95	Mega

C16

1	Storm	Mastertronic	↑	1.99	Iffy
2	Winter Events	Anco	↓	7.95	Awesome
3	Molecule Man	Mastertronic	↓	1.99	Crisp
4	Gun Law	Mastertronic	↑	1.99	Crisp
5	Comp Hits 10 Vol 3	Beau-jolly	★	9.95	Crisp
6	European Games	Tynesoft	★	7.95	Mega
7	Footballer of the Year	Gremlin Graphics	★	6.95	Crisp
8	Future Knight	Gremlin	★	6.95	T.B.A.
9	Power Ball	Mastertronic	↓	1.99	Crisp
10	Kik Start	Mastertronic	★	1.99	Mega

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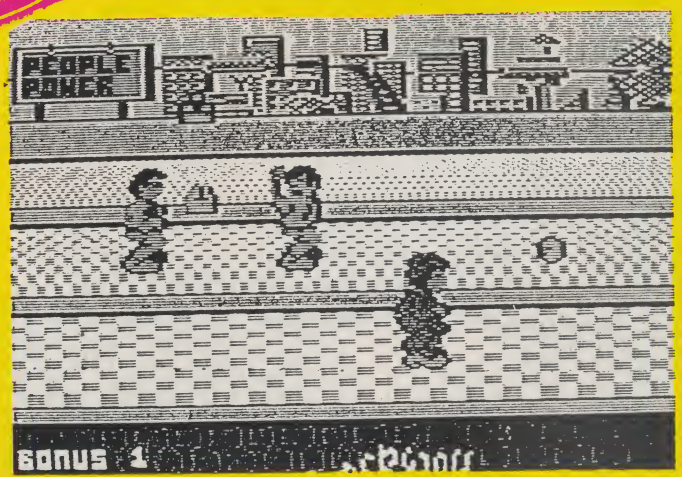
MEGA SHOCKWAY RIDER



Shockway Rider by FTL

Shockway Rider is a knockout. It picks up the theme of the danger that lies in city streets and challenges you to clean them up. If you've seen any of the Death Wish series of films you'll know what to expect. Muggers and thugs, knives and bricks, watch your back or your head will roll. Literally, that is in this ultra playable game that will grab you tighter than fear on a dark lonely alley when a street gang comes your way.

You've got to ride three moving walkways as in some SF city of the future. They go at different speeds and you can jump from one to another to avoid the menacing gangs that roam this asphalt jungle. You are a tough Charles Bronson lookalike and you have go the "Full Circle" —that is travel the whole way around resisting attacks and obstacles. There are eight levels of moving walkways which are neatly programmed to include perspectivies. You have to get around a circuit in a certain time. And you can get extra lives for blowing away awkward customers you come across — including even eliminating passers-by. You can collect bottles and bricks to help you do it. Travelling on a faster lane gives you extra points and completing a district gives you a bonus.

This is a fun game based on a vicious and all too real theme.

It is a fortunately exaggerated reflection of the violence on the loose in cities around the world. But so what? Most — no all —other shoot 'em ups make you do just the same except that it is space aliens or some other permissible target you aim to blast out of existence.

I suspect that if this game were seen on TV, the Mrs Whitehouse and other censor-type moaners would go bananas about it and try to get it forbidden. I think it is a first rate game that demands a high degree of skill and terrific reflexes to keep youself safe and on the move. it is the sort of game you will come back to again and again especially because each time you play it, it will be different. Sometimes you will find that you can blast away the gangs, others they'll get you with ease. The music is as addictive as the game — even Princess Krotoa liked it though she wasn't too keen on the decapitated heads bouncing around!

By the way, watch out for those innocent looking old ladies, turn your back and they'll get you. When you're really buzzing and knocking out the muggers with practised ease, there's bound to be a moment when that thought will creep into your mind. You know, the one that Clint Eastwood says, 'Come on, punk, make my day."

Shockway Rider will make your day and week and probably month, too. Buy this, you'll love it.

Z.M.S.

CCI Rating Mega
Graphics ★★★★
Sound ★★★★
Playability ★★★★★
Price: £8.95 c £13.95 d.

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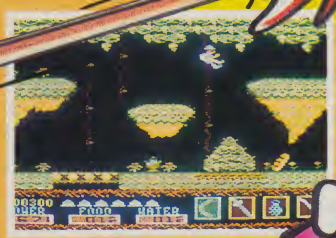

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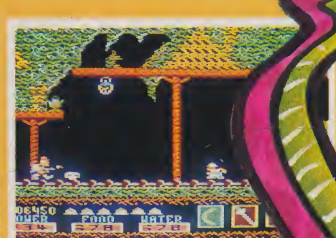

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MEGA REVIEW

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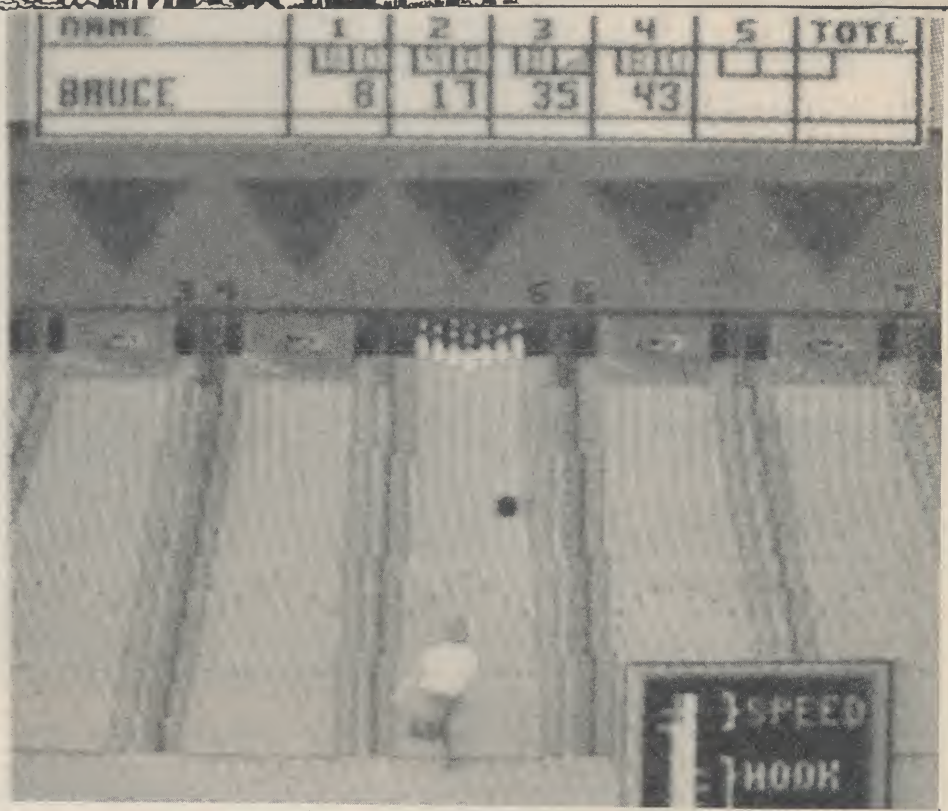
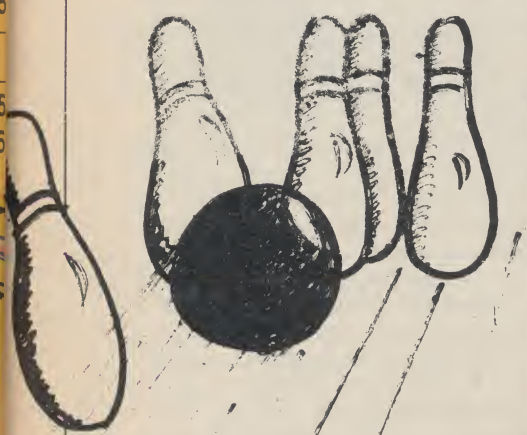
MEGA



10th Frame — Access (U.S. Gold)

Tenth Frame's reputation reached us before the game. It had actually been out quite a time in the U.S.A. before U.S. Gold brought it across the Atlantic. Maybe they thought that as bowling is not so popular outside the States, it wouldn't take off too well elsewhere. It is not often that U.S. Gold are wrong but they were in this case. Tenth Frame is a game — or a Sports Simulation — that everyone will like. It has got that beautifully judged level of attraction that could satisfy everyone from kid to pro. And that is precisely the range which it offers kids, amateur, and professional. And while the kids level is pretty easy and still fun, the pro level is a terribly infuriating challenge.



You can play with up to 8 players and run for up to five games. You choose between league or open bowling and if you've chosen league you can have up to four players per team.

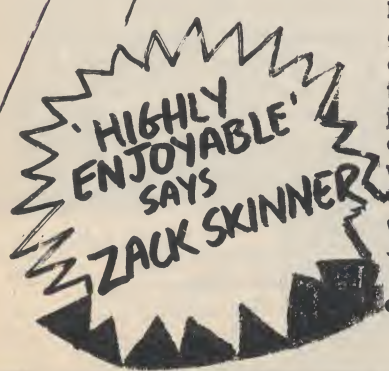
The kids level has been designed so that even 4-8 year olds can play. When you throw a ball at this level the ball goes straight where the shot is aimed. There aren't any real elements of skill at the kids level but is still good practice.

The Amateur level is really the Beginners' level and the bowling is affected by the speed you set and the amount of 'hook' you put on the ball. The Pro level is killer. You've got to have dead accurate bowling at this level and you've got to use the speed/hook indicator with your joystick with enormous delicacy and sharp reflexes or the ball just wobbles into the gutter exactly the way it does in real life bowling. You can also move the bowler and shift direction of the ball minutely.

The whole graphic element is extremely well-done. It has real smoothness and a very real look to it. There is nothing jerky about the man as he winds up and rolls the ball down the alley. Access have to be congratulated on a smart bit of programming to get the action to move so convincingly. There is not much sound except a rather nice rumbling crash when you knock down the skittles — or pins I suppose I should really call them. It's especially satisfying when you get the whole lot smashing in all directions.

I don't think there is anybody who has an interest in computer games who would not enjoy this one. It's fun and its is a challenge and you'll want to come back to it again and again to better your last score. I'd be very surprised if anyone got to score perfect game — 300 — without months' of highly enjoyable trying. By the way, I used an American version on disk that had a neat little protection that fitted into the cassette port. It was easy to use but don't lose it, in the States it cost ten dollars to replace! That's about as much as the game costs in the U.K.!

Z.M.S.



Price: £9.99 (c) £14.99 (d)
Graphics: ★★★★
Sound: ★
Playability: ★★★★★
CCI Rating: Mega

MEGA REVIEW

C64

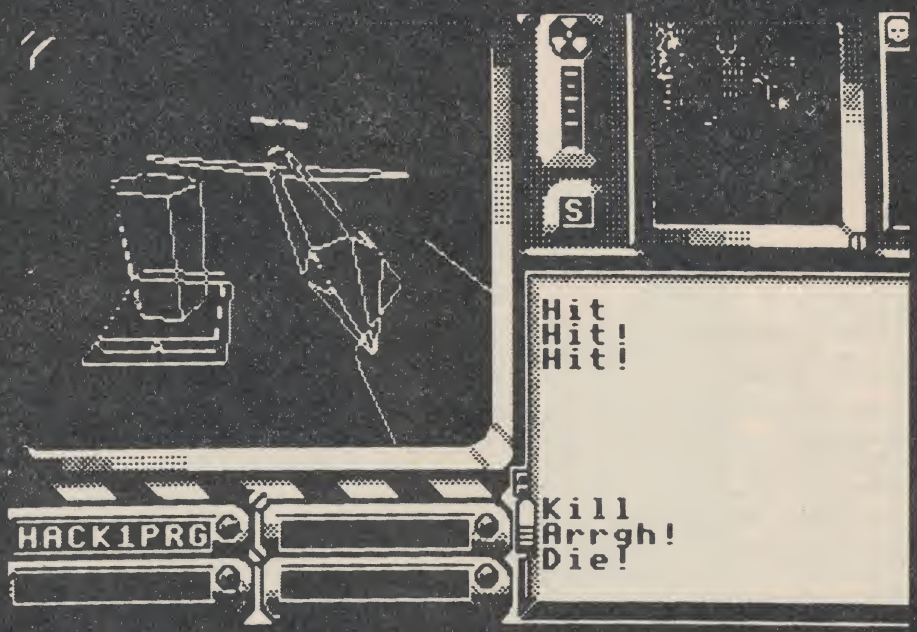
MEGA

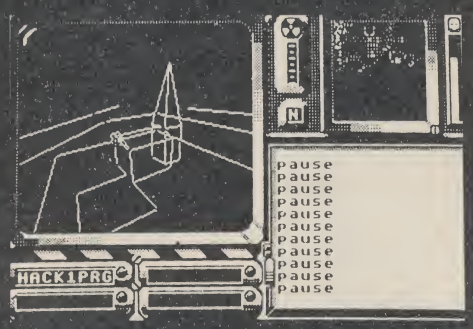
Cholo — Firebird

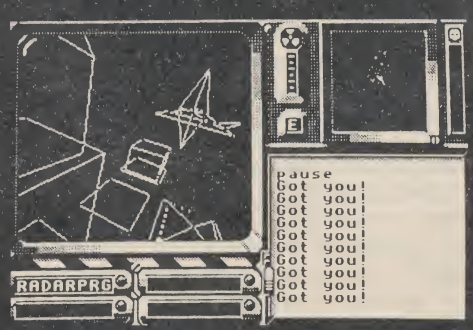
Rumour has it that Firebird have 3 new labels: the 'Of course it's not late' (CHOLO), the 'OK, it's late' (DARK SCEPTRE), and the 'I'd rather not talk about it' (STAR TREK). Fortunately Cholo's a mere 6 months late and it is rather good. Written by Solid Image, who did a disappointing job on Commodore 'Starglider' it's a good deal more ambitious and subsequently much more fun.

Vector graphics on the 64 have always been a slow process — remember rigor-mortis setting in on Elite when more than one ship was on screen? — and Cholo wisely concentrates on gameplay rather than complex shapes or lightning speed. The landscape of the game is huge, involving several fascinating locations that far exceed the variety of 'Mercenary' although the graphics themselves are somewhat inferior. Cholo is an adventurer's dream, but you'll need a quick trigger-finge to get anywhere.

The game is set in a post-holocaust world where mankind has been sealed in a bunker for his own safety. All he/you can see of the outside world is through the eyes of one of your droids, still patrolling the surface. This droid is Rizzo, a lightly armed rat-droid that you use to scout the upper world for clues as to how you can blow the lid off your bunker. It soon becomes clear that the other droids wish to keep you imprisoned and will do anything to prevent your escape. Your key to survival is therefore to regain control of other droids, whose capabilities may be of use to you; hackers can access computer terminals, doctors can fix damaged droids, tanks are heavily armoured, cameras are used for observation, and scum droids... well, work it out for yourself. There are also other 'things' that the game calls droids which you will have to learn how to use if you are to survive.







To control a new droid you first stun it by repeated shots, and then collide with it thus forcing a temporary override of its operating system. You may now attempt a guess at its password (quite logical when you know how). Although there is also a program of passwords that you can access using a hacker droid. Programs what you have picked up may be transferred between droids under your control) but only by the same direct transfer procedure. In play, this gets to be quite a chore but it keeps it hard for the purists, I suppose.

Cholo is vast, complex and very rewarding. For my money it beats Mercenary out of sight, but it doesn't have the immediate visual charm and it is about a year later than Novagen's masterpiece. For lovers of that, buy this — for everyone else, give it a try anyway. Mind you, I'm not sure about the price-tag — a touch of the 'Rainbirds' perhaps?

T.M.

VERY REWARDING! TINA MILAN

Price: (d) £17.95 (c) £14.95
Sound: N/A
Graphics: ★★★
Playability: ★★★★
Ratings: MEGA

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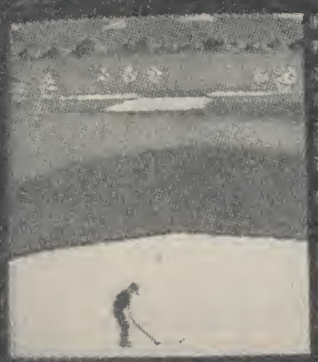
C64

IFFY LEADERBOARD EXEC



Leaderboard Executive by U.S. Gold

"Groving your swing" is a golfing expression that U.S. Gold and Access, who wrote this software, seem to have taken to heart. Leaderboard was certainly one of the entertainment software world's successes of 1986. One magazine has even claimed that it sold more than any other in the year. Yes, more than any game at all! Personally I don't believe that. I simply can't accept that a golf simulation no matter how good outpaced all the arcade shoot'em ups and especially Mastertronic mass sellers. But Leaderboard was without an '86 chart smash.

U.S. Gold followed it up with a sequel that let you play new courses but for which you needed the original Leaderboard. Now trying to "groove the swing", in other words following a winning drive with another by using exactly the same action, old U.S.G. have slipped the white glove on the all important left hand and blasted away down the sport sim fairway again with Leaderboard — Executive Edition.

Now as regular readers will know that while CCI liked Leaderboard and its sequel, we certainly preferred Ariolasoft's Golf Construction Set as a more original contribution to the 18 hole torture of frustration that is sometimes called "That XXXXXXX game!" And, though Leaderboard — Executive Edition is a good and fun game, it still, in our humble opinion, doesn't get close to beating G.C.S. Further, if you read CCI May you would have seen a lukewarm review of the Amiga Leaderboard that now has to contend with another Amiga golf simulation Mean 18, reviewed in this issue, that leaves it gasping in the rough.

"Executive Edition" gives you two new courses to play. You can take novice, amatuer or pro levels and it will take up to four players at the same time. There is a choice of 14 clubs The first two Leaderboard levels are not affected by the wind and are really pretty easy to master. The Pro level is more difficult but with some practice doesn't make too many demands on your skill. There is a very useful set of instructions that makes everything perfectly clear even for someone who has never been on a golf course. But if you have already played Leaderboard and its follow-up should you buy their follow-up's follow up? Well, if you are mad about trying another course or two maybe, but personally I feel that there has not been made much effort to carry the Leaderboard theme forward, to offer a greater challenge, really different graphics or techniques; to find that magic ingredient which would make it all seem brand new and special. It feels a little tired as a formula. You can hear that "It worked the first time and the second time, let's give them another basinful of the same thing." echoing through it. It might sound hard to ask for something new to be done when the first Leaderboard success is still only a year or so old, but that's the world of sport kid, and specially sports simulation on the computer — ye , you're only as good as your last shot — and I think this one ended up somewhere in the light rough. And by the way, don't get stuck on the island at Hole 8 Course B, It looks like there's a bug ther and you can't get any power into your shot. We gave up after dropping 32 shots into the water! That XXXXXXX game!

ZS

Rating: Iffy
Graphics: ★★★
Sound: ★
Playability: ★★
Price:

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C64

MEGA POD!

P.O.D. — Mastertronic

POD! POD! POD! And more POD! Mastetronic we love you. One day when you die you will be transported to game makers heaven for having created and released POD onto an unsuspecting world for just a measly £1.99. This could easily be a full price game and it would still be worth it. No wonder our competition chief picked it out last month before I even got my eyes on it. I love it. As Masterly Mastertronic say it has no pretentious story line and no mega reality to justify its existence. It's just an out-and-out shoot 'em up that is as exciting and addictive as any game you'll buy this year. There are 25 levels to play — or rather to survive — each more difficult that the last and all of them needing hair-trigger responses and your total attention.

You play across an interconnecting grid of wire along which your POD moves. The aliens which you have to shoot out of existence generally come down on you from the top. You blow them away — if you are lucky! But when you do that you cause some damage to the grid and neither you nor they can move across the damaged area until a few seconds later when it heals itself. Of course, you are vulnerable while that happens so you've got to watch that you don't trap yourself in with the aliens raining out of the sky! You have at each level to stay alive for a certain time and each time you finish a level you get a much needed extra life. In Gauntlet style there is a dual player option with

both players on screen simultaneously and helping each other. You pile up a joint score then that really takes you zooming and is terrific fun. Every fourth level there is a bonus screen or a high scoring level that gives you the chance to increase your score. Blowing up aliens gets you fired on in response and at the higher levels you'll get hunted across the grid. Sometimes you will do better just concentrating on staying alive than shooting up the baddies and that is difficult enough.

There is only one piece of advice that is worth giving in POD. Keep shooting. Keep shooting and then keep on shooting some more! Trailblazer and Kik Start were two of most successful games of recent times. They were both written by Stuart Southern who wrote POD. I'm going to send him the Skinner Benefactor of the Human Race (Shoot 'em up Class) Award. He — and Mastertronic — deserve it for POD which is the best value shoot 'em up game of the year so far. Even the sound is quite good. All this for £1.99. Amazing!

***Price:* (you won't believe it!) £1.99**
***Graphics:* ★★★★**
***Sound:* ★★★**
***Playability:* ★★★★★**
***CCI Rating:* Mega**

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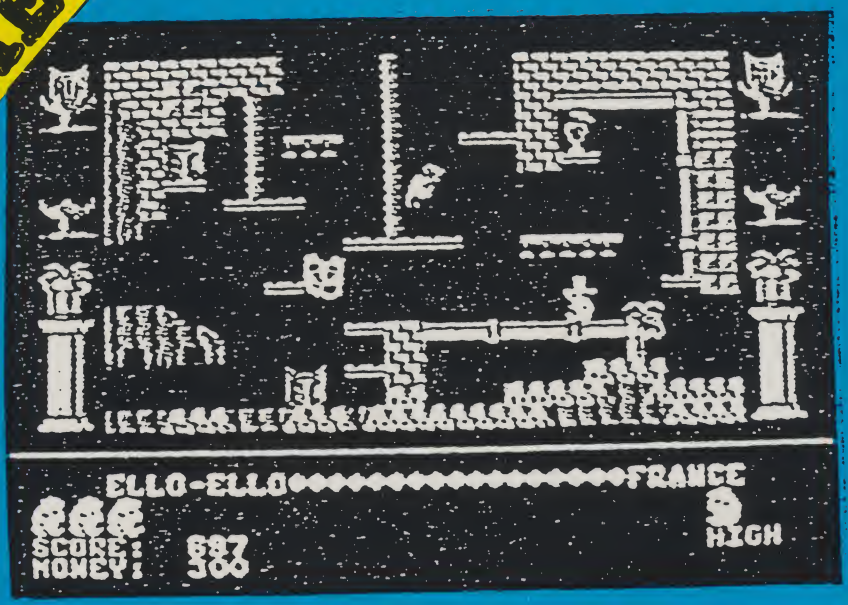
MEGA REVIEW

C64

AWESOME



Auf Wiedersehen Monty — Gremlin

Monty's back! Once again he's on the run and this time he's trying to buy an island where he can be safe from extradition. Whether he succeeds or not, this, (sob, sob!) is his last adventure — (sob, sob, boo-hoo!) and with tears in our eyes we sob!) have to say good-bye to our longtime, animal hero. (Gremlin even sent us a tissue to wipe our tears!)

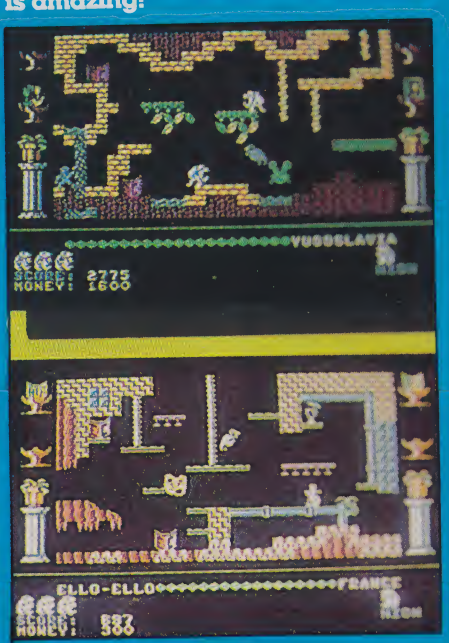
But have no fear — Monty is going out with a bang in this — his greatest, yes greatest adventure. You will find yourself trekking through mountains in the Pyrenees, flying a plane to Paris, getting electrocuted, walking on the ceiling and doing many other quite extraordinary things just to get enough money to buy your paradise island.

As you explore the first little island — Gibraltar — which is only one screen large, you will begin to see some of the clever little touches which this games incorporates; as you walk down a slope you roll onto your back — or just to catch you out — you don't. On some platforms you jump in it takes control of you and starts spinning and bouncing you higher and higher until you go into the next screen or it runs out of bounces. Sometimes you get a bottle of wine, you start moving up a rope, or running around, or you get reverse joystick controls, i.e. right equals left, and other times nothing happens. This really helps you muck up your routine!

Another nice touch is on a little island where, when you walk on — three coconuts fall down from a palm tree. On the screen next to it, a creature slides onto the screen, opens its eye, peers around and then slides off the screen again.

Once you've cleared Spain of its treasure, and climbed the icy Pyrenees — dodging a snarling tiger head on the way — you must take to the air and fly to Paris. When in flight, if you can keep behind the planes in front of you just on their tails you increase your screen.

Then there is Grand Prix Racing and selling the Mona Lisa! Give yourself lots of time though. Your next go will have you jumping out of the way when you land your plan. It is amazing!



The graphics of Monty itself are plain grey, but really detailed and you'll think "oh how cute" when you see him jump — reaching out with his paws and stretching his body. There is plenty of other colour and the sprites of the meanies are detailed and endearing. On one screen, what looks like a little pixie with an oversize cowboy hat takes a pot shot at you with his gun instead of feeling angry you just have anothe go. It's that kind of game!

Now I've come to the best bit — the sound. It is just incredible! The tune is about six or seven minutes long and all the way through I was sitting their tapping my feet. The music really makes the game and helps drive you on, I love it! It's got to be the best music of the year so far.

The whole game is great — graphics, sound and playability. It's a long and extensive game but you don't feel overwhelmed by it. Even when you get killed ten times in the same place you DON'T get frustrated. (Well not always!)

If you don't get this last Monty game and you're one of his many fans you must be cracked. If you're a not a fan give it a go anyway — you won't be disappointed. This is really awesome.

CK

Price: £9.95
Graphics: ★★★★
Sound: ★★★★★
Playability: ★★★★★
Rating: Awesome

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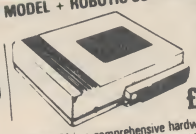

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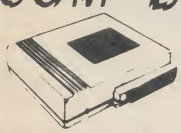

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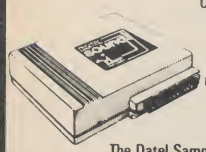

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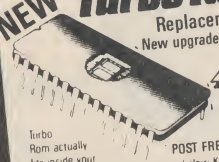

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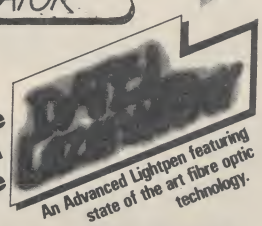

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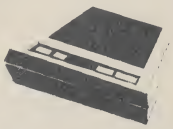

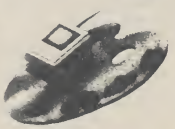

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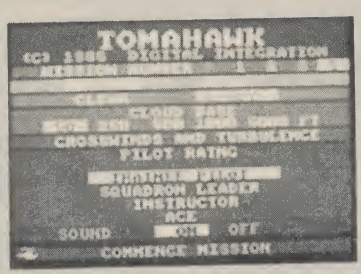
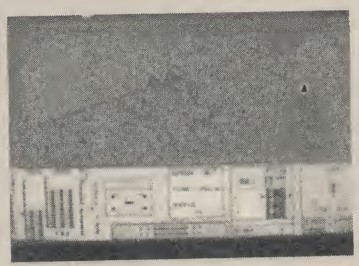
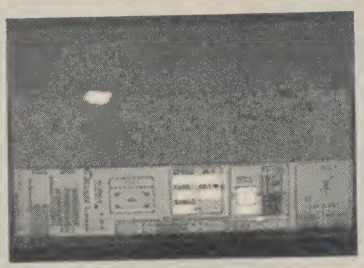
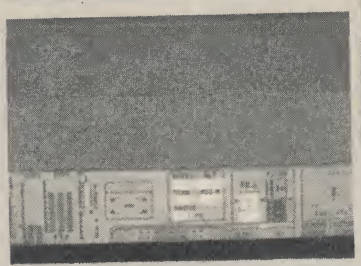








Tomahawk — Digital Integration

When you buy Tomahawk, you get among the excellent documentation, the instructions for the controls etc. They are not only in English but also in German and French. This multilanguage approach is not surprising, for a flight simulation of this quality immediately commands an audience wherever there are computers on which it can be run. There are, of course, already helicopter simulations you can buy. Micraprose's recent Gunship springs to mind. But somehow the noisy Chopper holds a magical attraction for all of us who picture ourselves as one of the lucky few who fly these totally absorbing "toys". And if you are one of us dream chopper pilots then the odds are that you will find Tomahawk excellent fun.

You can choose from four option levels — Trainee, Squadron Leader, Instructor or Ace. Unless you've really been practicing for months or you've got the speed of light reflexes my advice is, initially at least, to stay away from Ace. I found it extremely frustrating to discover myself crashing the chopper all the time at that level. However, the others offer a more reachable and extremely enjoyable challenge.

There are loads of features to look out for in what Digital calls "3D real world display". You have various landing pads, of course, and such things as buildings, electric pylons, and mountains to avoid. And, naturally there are the enemy tanks, guns and helicopters to fight against. You can go on Flying Training or Combat Missions of different kinds. In some you are required to liberate certain sectors, in others you may need to get to grips with the whole enemy force and free the complete map area. In one mission, a strategic battle is taking place for the whole battle zone and your task is to support all forces in their fighting along the whole front line.

There are also other complicating factors that can be introduced such as night flying, cloudy skies, crosswinds and turbulence. Tomahawk has over 7000 ground features and you can perform aerobatic manoeuvres — within, as Digital Integration points out — the limitations of real helicopters, which means you can't fly upside down underground as I apparently tried to do a couple of times. Another useful and well-developed

HAWK

feature is air-to-air interception in addition to the usual ground attack.

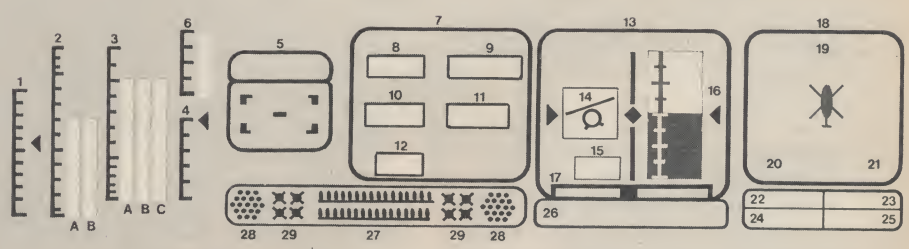
With this simulation you receive a very instructive leaflet on real helicopter air-to-air combat techniques which is well worth reading in its own right. It give a fascinating view of the techniques that are in use in the rare occasions when helicopters battle against each other as opposed to their normal wartime role as ground support.

Digital Integration are already well known for other simulations like the highly regarded Fighter Pilot, still thought of as a classic of its kind.

Tomahawk is a worthy successor and there is no doubt that Digital Integration have reached the same standard with this one. For simulation fans, a long time will pass before another helicopter simulation will be as interesting and value for money as Tomahawk. For what it is and at under ten pounds for the cassette and a few more for the disk, it has got to be mega-rated value.

Z.M.S.

INSTRUMENT PANEL



INSTRUMENT PANEL NOTATION

1 Collective lever
2 Torque % (a) Engine 1 (b) Engine 2
3 RPM % (a) Engine 1 (b) Rotor blades (c) Engine 2
4 Throttle indicator
5 TADS – Target Acquisition & Designation System
6 Fuel level
7 Pilot's Visual Display Unit
8 Speed, in knots (yellow = forwards, cyan = backwards)
9 Altitude, in feet
10 Time to objective, hours & mins
11 Vertical speed indicator, VSI, feet per sec
12 Distance from objective, in feet or miles
13 Artificial Horizon
14 Roll symbol
15 Roll angle
16 Pitch angle
17 Sideslip (drift) indicator
18 Doppler
19 Navigation/Compass Heading
20 Bearing
21 Track
22 Engines) Failure Status Panel
23 Weapons)
24 Nav computer)
25 TADS)
26 Score
27 30mm chain gun ammo supply
28 Rockets
29 Hellfire Missiles

Price: £9.95 (c) £14.95 (d)
Graphics: ★★★
Sound: ★★
Playability: ★★★★★
CCI Rating: Mega

Special Football Special

F. A. Cup 1987 — Virgin

This is a new and improved version of last years F A Cup Football. The reviewer last year gave it the thumbs down and was very scathing indeed! Let's see if Virgin have redeemed themselves.
This is a game for 1 to 8 players. The object is to manage one of your TEN teams — (I wonder what kind of salary you get!!!) — to win the Cup. There are 124 teams from which you choose your ten. Before each match you must set through the draw for that particular round (BORING!). The computer takes ages! For instance the first round draw takes 2½ minutes! You have control over your team in as much as that your tactics can be to play as an aggressive team, or a defensive team or as a balanced team.

As the round progress you are given some managerial questions to answer so giving an additional "strength" factor. Morale is also a factor which is effected by the "newsflashes" that crop up before a match.

The matches and their scores are recorded minute by minute as they progress — (Another real bore!) — except that you can speed up the clock rate so that a match takes around 45 seconds. From round 5 onwards you can have the opportunity to bring on a substitute at ¾ time. After that you can change tactics during each ¼ of a match.

I have given up completely with this program. I was as "sick as a parrot, David". There were 4 main reasons.

1. If you choose all first division teams you will win the cup with one of your teams every time!

2. There are no animated sequences such as you get with Addictive's "Football Manager" or arcade sequences like Macmillan's "World Cup Manager".

3. The sound and graphics were mega-pathetic. I also though that response to keyboard touch was over sensitive as one wrong touch still sent you on the next input without giving you a chance to correct your error.

4. This program is nowhere near the standard we have all come to expect in todays market place.

Price: £7.95
Value for money: NONE!
Don't be taken in!

Brian Clough's Football Fortunes — CDS Software

Here we have a very different game indeed. First you need at least two players although as many as five can play.

The program revolves around a traditional "board type" game. You have a counter which you move around the board as and when asked to do so by the computer. The board supplied I found very difficult to keep flat on the table. It comes folded and about eight times — so a little tip — glue it on to a board and keep it flat.

At the beginning of the game you choose to see who is to be the computer operator and who is to be the banker. You're then issued with £200,000 and a squad of 13 players. These consist of five types of players. Goalkeeper, defenders, midfielders, attackers and utility players. Each player has a star rating from 1 to 5 depending upon his skill. There are 112 player cards from which you can choose the equivalent star players. The remainder of the cards go on the board face down.

As with traditional board games you move your counter around the board according to the roll of the die. The problem being that there are different topics to land on some are good and some can decimate your team beyond recognition. This is down to luck more than judgement. They either help or hinder your prospects as a manager. New players come up for auction and often you get the chance to buy a 5 star utility player. This really gets you gong with hectic bidding as if for a Van Gogh rather than a Van Den Hauwe. It's easy to see how some players get a rather inflated price tag put on them.

The different topics you come across are very varied and keep the interest going. Football Fortunes lets you make a move on the board followed by a match and so on until the end of a season. Sponsorship gives you extra cash. A crisis in the club leads you to sell your best player and pay up fines imposed upon you.

Buying and selling your players in a shrewd manner gives the squad extra strength so you can beat the opposition in the next match. There are the usual selection problems that any manager faces during a real season. The second season in the league allows you to play in European matches — (that's more than in real life!!). After each match the computer works out the scores and the revenue from the gate money.

The player with the most points and money wins at a predetermined point. I believe this program will set a trend and in the future we will see many more such games that take two people, a traditional type board game and integrate it with an all action shoot 'em up type arcade game to give a more social appeal to computer gaming. Such a game could combine many subjects and be a huge success. Jeff Minter think on!

"All in all I must say that I'm over the moon David!!".

Price: £14.95 (c) £17.95 (d)

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- **Cloudy, Crosswinds, Turbulence.**
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- **Pilots Notes.**

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C64

MEGA

SAMURAI TRILOGY

Samurai Trilogy — Gremlin

Gremlin have pulled together all the different varieties of the Kung Fu/Karate game genre oriental fighting arts of which, the Samurai are supposedly masters: Karate, Kendo and Samurai Sword fighting.

The format of the game is very similar to their previous karate offering, Way of the Tiger. It's a multi-load, and the first event is an unarmed karate game; the second involves the use of Kendo poles (the equivalent of Pole fighting in Way of the Tiger), and the third is a fully fledged sword fight against other masters.

Now don't yawn and turn the page yet, this game isn't boring as are the many other run-of-the-mill games involving the martial arts. You must prepare yourself by meditating (very useful in real life too, if you work for a mad magazine!), you must also do sparring, reflex training, breathing exercises and many other things before you are ready to meet your fearsome opponents.

You start with karate and under the advice of your mentor Chu Yu. You must award yourself attack and defence patterns, this determines your hitting power and lets you program various defence strategies against different opponent. The way you fight in karate is totally different to any other game. It reminded me of these karate films you can get on video, where people fight in the style of animals. The style in which you are is mostly like a snake, as you move along on your toes, whipping your arms around furiously.

The karate makes the whole game work, and in my opinion is the best event on the tape. It is excellent. To get on to Kendo you can either Kayo opponents outright or win on points. You must, however, get your Chu Yu's favour.

Kendo is played out in a small room and it isn't worth going into much details about it as it is the most unexciting of the events.

Samurai is the penultimate event and it takes some fighting to get there. It is very good as you make sweeping swings with your sword and spin it around, and is the most accomplished sword fighting game I've ever played.

While one could ask Gremlin, "Why not put your efforts into something different next time?"

All in all this is another excellent game from Gremlin whose standard of production continues to be outstanding and value for money second to none.

C K

Price: £9.99
Graphics: ★★★★
Sound: ★★★★
Playability: ★★★★
Rating: Mega

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Nemesis THE WARLOCK

2000 A.D.

says...

CUT OFF HERE

MEGA REVIEW

C64

MEGA

Nemesis The Warlock
C64 — Martech

Nemesis the Warlock is a hero from 2000 AD the best selling British comic, and is the latest in a long line of games with characters from the comic. I'm pleased to say this is the best release so far and they haven't totally changed the storyline to adapt it to the game.

Nemesis is the leader of all aliens in the galaxy — well — not the leader, a kind of hero, and he defends them from Torquemada, an evil, fascist human — who hates all aliens. Torquemada being the evil person he is has now attracted enough of Nemesis' personal attention to warrant an assasination attempt. You, as Nemesis, armed with sword, gun and physic fire balls enter Torquemada's domain and must hunt him down and face him one to one, in a confrontation from which there'll be only survivor.

Battle your way through screen after screen — killing a certain number on each before moving onto the next. Collect bullets strewn on the floor, by bending down on exactly the right spot and picking them up. Aim your gun and fire, shoot the zombie that's just exploded from that dead body. Oh no! You've run out of bullets. Use your sword! Three, two, one man togo! He's too close for your sword; use your fireball! There! Finished! Now on to the next screen before the hand squeezes your life force.

That's what this games about — blood and guts, bodies exploding to reveal zombies that drain your energy quickly — a macabre hand that holds your life force and slowly, as you lose energy, squeezes your heart till it bleeds away. This may sound gruesome and sick but it entirely fits with the comic strip in character and style.

The graphics are excellent, with Nemesis drawn with all his haughty, arrogant proud bearing and he is exactly as you'd have pictured him if you've seen him in 2000 AD.

The music by Rob Hubbard, micro maestro, also excellent. It is eerie and atmospheric, but it doesn't play during the game which is a shame. My only real criticism of this game is its difficulty — we had trouble getting off even the first screen for a while. It took us ages to move further along, it must be one of the most difficult ever. However, if you relish a real challenge, you'll love Nemesis the Warlock.

C K

Price: £8.95 (c) £12.95 (d)
Graphics: ★★★★
Sound: ★★★★
Playability: ★★★★
Rating: Mega

Super Felix is "Fee-line". That means pay cash and he woien

A Mess of Potsdamage

Katie Veats, Commodore's fabulously wealthy spokesperson is strongly rumoured to have found a new use for her Amiga. The elegant Katie's fascination for very expensive jewels is well-known to be second only to movie star Liz Taylor. Reliable information has reached me that stories of the major part of the Switzerland auction of the late Duchess of Windsor's multi-million pound jewellery

collection heading to Harvard College in the U.S. are mistaken. It was Katie ('I don't bother with cheques under a million') Veats who snapped up most of the Windsor sparklers — the "Harvard Story" was just a front. (It always is! Ed). Katie connected her Amiga to the auctioneers' close circuit TV system and using Genlock software from Ariadne and DeluxePaint from Electronic Arts indicated her million dollar bids with neat little ikons for the cash. Katie has admitted to O.S.E. that she laid out at least 10 million florints (what the hell is a orint anyway?) on that little jewelled Windsor leopard that had set her many faceted heart a-flutter. She promised him to wear it at the next CBM press conference — no doubt to announce the sixth CBM UK boss in 2½ years. And the begemmed Katie has a shrewd sense of history too. When O.S.E. asked her about Chris Kaday, the most recent CBM UK supremo who disappeared abruptly one Monday morning, she coolly answered "Who?".

Ah yes, le pauvre Chevalier Kaday (R.I.P.) is now, as in the Stalin show trials in the thirties in Russia, an 'Unperson'. Then when someone offended Stalin, they didn't just disappear but were shown never to have existed. History books were reprinted without even their names, as international socialist — sorry socialite, Katie is well aware. Oh well, Professor Lepski, my globally famous linguistic consultant reminded me "Sic Transit Gloria Mundi" which does not mean as I thought 'Gloria (or even Chris) was sick travelling on Monday" but "At CBM all change but everything remains the same". (Are you sure that's right? Ed). Anyway, the Prof has put me and everyone at CCI in the doghouse (again? Ed). Speaking from the professorial hideout in rural Kricklevitch, the accusation was hurled that we are a bunch of louts — umlauts to be precise. We mentioned a game called "Moebius" in the last CCI. The Prof woke me at dawn last week and shrieked down the phone "You lot do not know your umlauts from your elbow! You need a couple of dots on top!" I think Prof Lepski was saying that it should have been ö not oe in Moebius, sorry Möbius, Those two dots, an "umlaut" also seen with CBM's logotype on the Bayern Munich football team shirts give everthing a proper Cherman Aksent. Jawohl mein führer Prof . . . anything you say. In German, ñüfürllch. Do you think the Prof is going potty — or Potsdam as they say in Berlin? In the same conversation Professor ("Linguists do it with their tongues") Lepski seemed to want to take the name Alan Sugar, of Amstrad notoriety. I'm sure I heard "Me Sugar Dumköpf" grunted down the phone "and it's University not King's College! Schmock!" (I thought we weren't going to use that word again! Ed. — And who is this Professor Lepski? I don't understand this umlaut business. It sounds foreign to me and so should not be mentioned in a decent magazine! And what's it got to do with sweet Katie Veat's? umlauts! Get onto something more respectable or you're fired!)

Danish Blues

CCI ad ace Major Billy ("Thatcher should have nuked Garbidgoff when she had him in the same room") Brown came stomping up to my basket in a fury (as usual). He had phoned Melbournatronic House's marketing supremo Lady Jane Denning to congratulate her on MH's unbroken string of software successes and her elevation to celebrity by appearing in this column when she accused him of being sexy. Major Billy was rather pleased — that hasn't happened for the longest time. Unfortunately the Major is rather deaf from grenade explosions in his cellar. It turned out she'd said "Sexist". And it wasn't him but me. Apparently Ms Denning thought the term "Chef" qualified as sexist. Now innocent me thought "Chef" simply meant someone who knew their onions in the hot plate stakes, if you see what I mean. From my reading of the Danish magazine where the description of Miss Denning's talents appeared it seemed Mrs Denning's cooking abilities were being lauded to the leaden Swedish skies. It's true my Norwegien is a bit rusty these days but whose isn't. So don't blame me, Mistress Denning. This little pussy (no relation) was simply miaouing in praise. blame the evil Scandinavians, Master Denning for spreading such rumours. So I will, just for your satisfaction, totally unsexistly announced to all that you are a rotten cook and would not recognise a tasty dish if you stared at one in the mirror. (We know that's not true, don't we but if that will make you happy... Mr Denning) (Don't you think, dear reader, that software folk are very odd? And didn't you think it was a pity that Lord Denning retired from being a judge?)

Wronging a Wright

Well, well, did Mr Right go Wrong? Sir Andrew (Andy Pandy) Wright last year left Activision to join Thalamus a company founded by Newsfield, a publishing company that is believed to advertise in Dandy and Beano in the hope that their readers will mistake its computer publications for comics of a similar intellectual level. Mr Right has now returned to Activision which recently announced that it is to keep up its position as world number one by releasing some coin-ops selling its old titles to Firebird Silver. I can now exclusively reveal however that the true Activision strategy is to form a Corps Diplomatique to enter international arcade politics with such titles as 'Big Trouble in Little China', written personally by the famed Sino-Hampstead programmer and Chinese leader Dung Show Penn. This global coup was delicately negotiated by Mr Right who has now been elevated to the rank of "Ambassador". (I swear O.S.E. has a business card that says just that!). I understand that His Excellency Andy Pandy as the press has been instructed to call him will shortly be dicussing with P.M. Margaret ('What no 3 millionth 64?') Thatcher a new arcade shoot 'em up called "Nuclear War — and How to Cause It' for which Andy Pandy is keen she should write scenario. Thalamus was originally called Thanatos but they found out through these humble columns that it meant 'Death Wish' and they realised they already had enough of that. The software company has clearly been a raving success — the other founding boss, one Gary Pencil, has also departed and the whole mega-operation is now taking shelter somewhat sheepishly in the offices of Incentive Software. The name Thalamus, as I'm sure you all realised, referred to the Greek tragedy (or was it comedy?) play acted by

e womention you... (UNLESS SOMEBODY ELSE PAYS ME MORE!!)

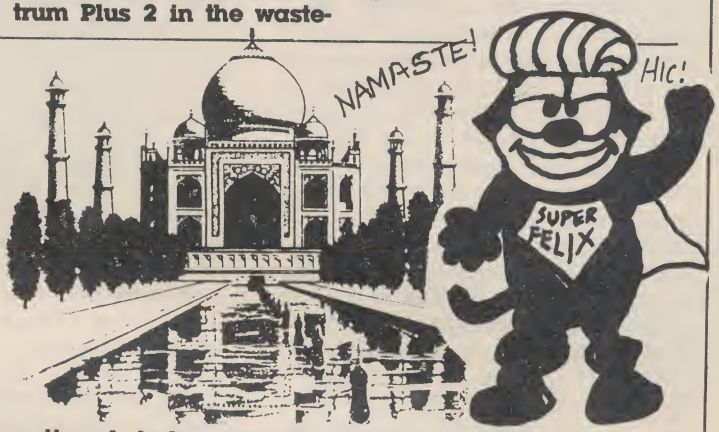
idiotic workmen in Shakespeare's 'Mid Summernight's Dream'. His Excellency Andy Pandy is not telling how close a similarity his recent Thalamusian experience bore to that part of Shakespeare's play, or whether his employers were a tragedy or a comedy — at least not to anybody who will listen.

Pursuing the Trival

You've got to admire Domark, and their aristocratic Spanish PR man David 'Zapatos Blancos' Carlos. Their restless intellects are ever searching for some new way of exciting the Commodore Media. They have now, I and the rest of the world's press can exclusively reveal, grabbed the computer rights for the latest James Bond masterpiece 'The Living Daylight'. But the reason they continually capture my attention is the never ending shower of different 'Trivial Pursuits" that plops into my basket. I have just had the IBM PC version, the Genus (whatever that may mean) edition and now the Baby Boomer edition, which has nothing to do with babies, I am relieved to say. This was the most interesting of all because they and maybe you, might not have noticed this is a Commodore magazine yet they sent me a version which was for another computer called Spectrum plus 2 that I believe no-one really thinks exists. I was intrigued to receive this Spectrum version. What did it mean? And do you Know something? When I tried it on my trusty 64 — it did not work. Not at all.Very impressive. Damned clever these Domark people, ... Now was this, I wondered, a subtle criticism of Commodore for not calling the 64 — Plus Two? Was it a hint that they wanted us to change the name of the magazine from CCI to Trivial Pursuit? Was it some machiavellian Hispanic plot as a revenge for the defeat of the Spanish Armada which everyone knows was mostly achieved by Admiral Francis ("Pirate") Drake and his ships of 64 guns? Until I find the answer I have carefully filed Trivial Pursuits Spectrum Plus 2 in the waste-paper basket. Something else is going to happen! I am too wise an old pussy not to realise that Domark and Señor Carlos know exactly what they are doing all of the time. (As my American pussy cousin says) "I'm waiting for the other shoe to drop" 'Which country did the Spanish Armada come from?' and send your answer on a postcard to P.O. BOX 007, Domark Hall, Wimble Don, Spain.

Oh quel cue t'as

I have just heard something very moving about the Very Reverend Anil Gupta, Lord of the Anco Empire. While on his recent visit to India to advise Prime Minister Rajiv Ghandi on spiritual and Plus/4 matters, the Very Reverend Gupta's hair suddenly turned pink and green. As great stress can make heads white overnight, I understand so, in India, intense holiness can turn hair pink and green. Isn't it wonderful in this sinful computer world we inhabit that we have such spirituality as the Very Reverend Gupta's example to follow? I hear he has been asked by the conservative politicians who run the State of Kerala to organise for them an international holy computer festival in Calcutta to be called, I believe, "Anco Summer Events". They are especially keen on inviting a certain German athlete called Fritz who is favourite for the crown of "Kingsoft" that goes to the supreme champion rather like at Krupps or is it Kruffs Dog-show? I should warn any of you however that although Anco is paying the expenses for the entire 5000 strong U.K. team even the Class Snooker players, that, as is the custom in these "Summer Events", the losers, if the Very Reverend Mr Gupta gives the thumbs down are thrown into the Ganges — unless, of course, their hair turns pink and green overnight. Namaste.



I have been repeatedly asked for photos of CCI's staff so when Palace Software wanted some models for their new Barbarian Game, I invited them to use some of CCI's attractive people. From left to right, Major Billy ("My skirt doesn't seem to fit today") Brown; Maria, Princess Krotoa de Mose's social secretary whom you may sometimes see on Page 3, and Anthony Mael, CCI's Features Editor with the editorial instrument for cutting text. They have given the 5 million florints (what the hell is a forint?) that Palace paid for their services to the "Save the Barbarians" Fund. Please send your contributions to Buckingham Palace Software, The Mall, London SW1 HRH.

YOU CAN HAVE YOUR PHOTOGRAPH HERE FOR SENDING ME THE BEST BIT OF TOTALLY UNTRUSTWORTHY GOSSIP. NO LONGER THAN 'WAR AND PEACE' — BETTER THAN BEING ON THE COVER OF SOME OTHER MAGAZINE I WON'T MENTION!

HAPPY BIRTHDAY LADY JANET D'AYSTERVILLE — SUPER FELIX! 7 MY PAD

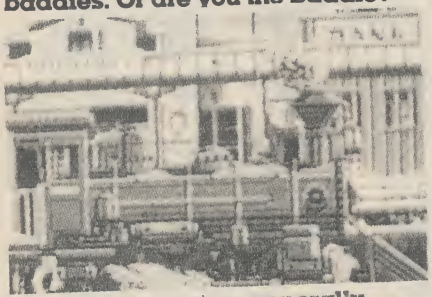
HAVE YOU HAD ENOUGH MISS NICHOLSON OF EASTBOURNE? OR WOULD YOU STILL LIKE CCI CENSORED? 5,000,000 FLORINTS STOPS THE SCANDAL HERE!

REVIEW

Express Raider — Data East (U.S.Gold)

CRISP

Express Raider will appeal to everyone who can be said to be a one-time or even still today arcade player. It reproduces pretty accurately the arcade game from which it has been taken and it provides a load of non-stop frenzied action to keep you joystick bashing until you have reached the gold stacked up on the locomotive. All you have to do is fight you way past some western style bruisers who are out to punch, kick and shoot you off the top of a train. It has undoubted addictive qualities for it will make you clutch your joystick for many a try as the attackers send you flying head first off the train roof. There are horse riding levels too in which you have to be highly accurate and sensitive with the joystick to control the horse and shoot down the baddies. Or are you the baddie?



Stealing the cash is generally thought to qualify for that! The graphics are neat and if not sensational at least acceptable as the train scrolls left under you. There is a time limit for you to get past everyone — an a bomb splits up the train if you don't.

You can get bonus points by shooting passing birds carrying bags of money (Not many fly around my way these days!) or from a sack of cash someone throws out the window to you...There tunnels and swinging signs to watch out for. There are quite a few options and levels to choose from and I'd say that this will be a successful game for Data East. Why East? I'd guess it is because this game was programmed in Hungary where, ironically, because violent games are officially frowned on, it is almost certain that it won't be avaiable! Funny place this computer world is, isn't it?

Z.M.S.

CCI Rating Crisp
Graphics ★★★
Sound ★
Playability ★★★
Price £9.99 (C) £14.99 (D)

Arkanoid — Imagine

CRISP

Arkanoid? The name isn't familiar but the game certainly is. This is Gremlin's Krakout! NO, sorry, of course it is Breakout. No, not really, it says on the box Arkanoid, so it must be that. Whatever they call it — and it has one of those stupid stories that is supposed to make you think you are up in space rescuing something — whatever they call it, it is really an arcade conversion of longtime favourite Breakout. And it is no worse for that. It is extremely playable and it's got a very listenable sound track. It's also very good to look at. There is nothing very complicated about the idea. You have to move from screen to screen, getting rid of everything in your way. You toss a ball from the bottom up and, like Krakout, it bounces around and knocks out everything it hits. A few of the squares you have to knock out will take more than one hit to blow away and some will give you extra features like catching the ball and a different route to the next screen. You have also to watch out for some nasties that will blow up your ball.

I like this kind of game. It is totally mindless but is a real challenge to your concentration and speed of response. It also has the addictive quality of the good arcade money swallower — it will bring you back again and again for just one more try. It has a nice option of being able to use a mouse. You might as well get used to that. The Amiga 500 will have us all using one soon. And they are much more fun than joysticks!

Z.M.S.

Price: £8.95 (c)
Graphics: ★★★
Sound: ★★★
Playability: ★★★
CCI Rating: Crisp

Shoot 'em Ups — Master Games

CRISP

Master Games has produced a four-game compilation of US Gold games. The four games are: Super Zaxxon, Dropzone, Blue Max 2001 and Fort Apocalypse. The first for you to tackle is Super Zaxxon. It is a copy of the old arcade favourite. You are on a solo mission to penetrate the innermost reaches of the Super Zaxxon fortress. There are many forms of enemy life out to obstruct your mission. Your ultimate task is to get to the ultimate weapon of the fortress, the fire breathing dragon. If you get to the dragon and destroy him then you will go on to the next level. The game scrolls horizontally and you view the game diagonally. The graphics are reasonable. The sound is also so-so. A game for the enthusiast.

Dropzone

In Dropzone, the year is 2085. There has been a robot war that has stunned the solar system. Only a few people have survived. It has been decided to try and move the survivors to another star system. The cruiser you are gonna use has to have ionian crystals to get its power. These crystals are rare and can only be found on the third moon of Jupiter. It's a very good version of defender. The graphics are good and sound is reasonable. The best game on the tape.

Blue Max 2001

You are Max Chatsworth IX, a direct descendant of the Max Chatsworth of Blue Max fame. You are now about to fight the most evil think the world has ever seen. The Funxx have captured the earth base Gamma IV. You've jgotta stop the Funxx before they capture earth itself. Not the best shoot 'em up I've ever played.

Fort Apocalypse

This game has the usual story line, destroy or be destroyed. You must rescue eight prisoners that are missing and eventually destroy the Apocalypse. The graphics are large and chunky and nothing earth shattering. All the games on this tape are a bit dated and I find I got bored very quickly. I want some variety to life not repeats (sounds like the BBC!). Overall here is a very decent package for the shoot 'em up lover and is really good value for the price.

Price: £9.95 (c)
Graphics: ★★★
Sound: ★★
Playability: ★★
CCI Rating: Crisp

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With 3 different versions of the famous Leaderboard now available across 7 systems there are dozens of testing courses, hundreds of challenging game variations, designed to test your skill and judgement, designed to integrate and complement each other and lead you from one level of competence to the highest possible plane of tension and excitement. Leaderboard is the individual challenge with unknown variations and tests of your abilities.

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A game that's frightening in its demand and realism, only the mentally tough will survive these encounters unscathed.

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		£14.95 d	£14.95 d	£14.99 d	£24.95 d	£24.99 d	£24.95 d
TOURNAMENT LEADERBOARD	£ 4.99 c	£ 4.99 c	£ 4.99 c	£ 4.99 c			
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REVIEW

S.O.S. — Mastertronic

NAFF

Mastertronic have now established themselves as a popular software house producing some good and some bad software. I am afriad to say that S.O.S. is not one of their best. This looks so much like Chimera by Firebird that I had to check my data cassette to make sure I had the right game in it!

You control a droid called Blomech I (Sydney to his friends) they keep telling me. Blomech I has lost himself in a ruined city and unless he finds his way back safely the his inventor will turn him into a ZX81! (A fate worse than death!).

Sydney must find a radio which will lead him to safety. On this planet there are several other not very friendly robots who attack our poor little Sydney. Items you may find on your travels are coins, lamps, tickets etc.

All in all a 3D maze/arcade adventure which is so dated it's unbelievable. The graphics are clear and without a doubt the best thing about this rather poor game.

Sound is limited and it is difficult to control Blomech I (that's Sydney in case you had forgotten) because he rotates to quickly and I ended up getting eaten when I wanted to go left. Watch the screen as it gives you helpful messages like "You have trodden on a mine"! Really helpful eh?

JA

Price: £1.99
Graphics: ★★
Sound: ★
Playability: ★
CCI Rating: NAFF

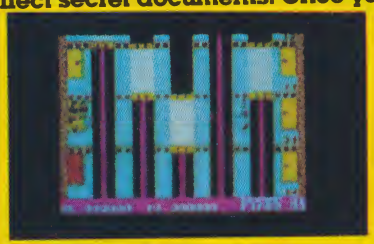
Elevator Action — Quicksilva

IFTY

You may have seen this game in your local arcades and Bingo halls recently. (Bingo halls? Ed).

It's called Elevator Action and Quicksilva have snapped up the copyright from Taito whose arcade original it belongs to and have released it.

The game revolves around a little agent by the name of Otto who you control. As Agent Otto your task is to collect secret documents. Once you



have found these top secret papers you must fend off your enemies and hop into your getaway car which is waiting patiently for you at the bottom of the building.

The building is linked together by escalators. As you may have guessed the escalators play a big part in the game. You defend yourself with your trusty gun, however if that fails you always have your karate chops to fall back on.

There are lights on each of the floors which can be shot for extra points also it gives you the opportunity to have a kick at your enemy.

The secret papers are hidden behind one of the doors which are opened quite easily by our tough little agent.

One little hint do not attempt to ride on the top of elevators as you will get crushed — nasty!

Overall not a bad game, however when the game first started I thought my TV had shrunk because the graphics were so small but as I progressed down the building the building got bigger. The scrolling is average.

Colour hasn't been used to the 64's full capability and the same can be said for the sound. Just spot effects here and there plus bullet sounds. I can't remember the last decent game Quicksilva did. It's time they got their act together and brought out something to make us jump.

Price:
Graphics: ★
Sound: ★★
Playability: ★★
CCI Rating: IFFY

Return of the Space Warrior — The Power House

CRISP

Return of the Space Warrior has somewhat of a misleading title as I expected it to be a space shoot 'em up and it turns out to be an arcade action game based on the arcade favourite 'Joust'.

The basic idea of Return of the Space Warrior is to hit your opponent from above just by going into him and then pouncing on him again (sounds exciting eh?) You have 3 lives and have various skill levels to choose from. If you are equal with another space monster when you hit it then he wins and you lose a life.

Mind that you don't fall in the water because you can not float and this results in you losing another one of your valuable lives.

This is the kind of game that I like to play when I've got half an hour or so to spare because it only takes literally seconds to load. Okay so the graphics are a little chunky and the sound isn't up to much but it makes a change from your average agame. Also an added bonus is a free audio track by H.E.X., no I hadn'theard of them either . . . for the price it is very fair value.

JA

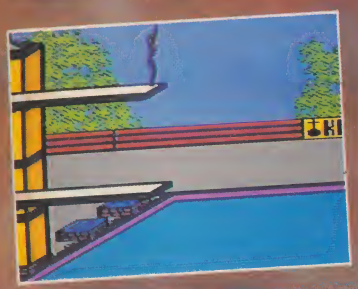
Price: £1.99
Graphics: ★
Sound: ★
Playability: ★★★
CCI Rating: CRISP

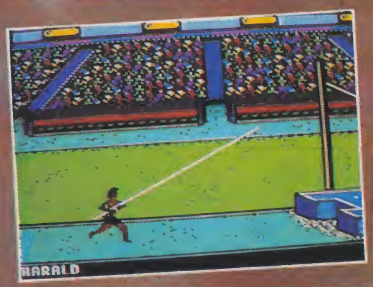
Cyborg — CRL

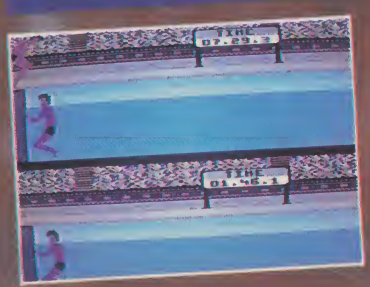
IFTY

Cyborg? Cyborg? Haven't I heard that name somewhere before? Yes, indeedy you have. From this very same old Cyborg. What do I mean by that? Well, Cyborg is one of those games that is talked about for a long time before it actually comes out. You hear about games like this — sometimes in hushed tones and sometimes with impatience. You know like Knight Rider. The pre-publishing story just goes on and on until you are almost tired of the game byt the time it reaches the shops. Now I know that's unfair and its really not always the fault of the software house. You can bet that *they* want to get it out on the street.

SUMMER EVENTS







C16/+4
£9.95

SUMMER EVENTS
by UDO GERTZ

UDO GERTZ, voted programmer of the year for his chart topper, WINTER EVENTS, has once again excelled himself.

The opening ceremony signals the start of a breath taking contest for supremacy in six events - Swimming, Cycling, High Board Diving, Kyaking, Steeple Chase and Pole Vault.

One to four players can practice or compete in one or all events and select the country they wish to represent. The Medal Ceremony at the end of each event, music, superb graphics further enhanced by expanded screen display (no border) and challenging game play set a new standard for C16 and Plus 4 games.

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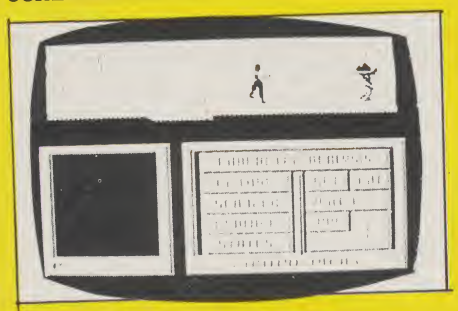
REVIEW

CONTINUED FROM PAGE 66

They are not holding it up just to spite *you!* You can bet your bottom dollar on that. But something beyond their control is holding them up. In the case of Knight Rider, it was suppoed to have gone to four different versions before Ocean finally gave up and, in desperation put out what they had, which was probably a mistake after such a wait you expect something terrific. It was not terrific. No and neither is Cyborg. Not but but not terrific.

The year is 2087 and — to cut a long story very short — you've got to stop an asteroid from crashing into the earth and causing (yawn) widespread death and destruction. Nasty things like that always seem to happen computer games, don't they? You have to ferry fuel and supplies to the astronauts on the asteroid and restore communications.



Now this game is very well worked out. You move up and down on various levels of the asteroid and through different 'rooms'. It has some very nice touches by which you can get into a "Character filing" system for information. You can examine objects you find and there is a useful scanner that lets you take a closer look at the immediate area from above. You have to shoot up the baddies you meet on your way and you can re-load your weapons when they run low.

The graphics are very well done — CRL always seem to be able to create very visually successful games. And the different tasks you have to complete certainly give the game interest but somehow it just did not excite me. Who knows, I may be alone in feeling this but it just seemed to lack that special magic that drags me back to the screen again and again. It's a pity because it looks very good.

Z.M.S.

Price: £8.95 (c) £14.95 (d)
Graphics: ★★★★
Sound: ★
Playability: ★★
CCI Rating: Iffy

Death or Glory — CRL

CRISP

Across the immeasurable void of space, an incredible fleet approaches the peaceful island planet of New Stratford. Just a speck on the civil radar system, a simple spacedozer ship was sent tosurvey the conundrum. With horror, the pilot of the asteroid demolition craft saw the radar speck become a huge invasion fleet. Then like a storm of meteors they were on him. Android fighters peppering his collision armour with a shower of missiles. Automatically he ploughed into them, crushing their super-structures like insect's thin shells. He cried out in fury and plummeted into a mothership, which ruptured into a blaze of dazzling plasma. "Death or Glory" he screamed triumphantly as his craft tore into the fleet.

Now I hate inlays that talk that sort of rubbish. There are too many games that are sold on a hyped up story of some amazing space exploits that come straight out of a space comic or an SF cowboy story. "Space the ultimate frontier" — they waffle — like this one and they turn out to be a load of old codswallop as a game; Something that no self-respecting shoot 'em up fan would bother twice with.

Now having got that off my chest. I will tell you that this Death or Glory isn't half bad. If they'd only given a bit more attention at CRL to the game instead of writing the linlay tosh then it would have been very good indeed.

You've got a sharp little craft and you belt across space blowing away nicely drawn scrolling blocks and some speedily attacking alien ships. The background to your movement is not very convincing but the blast away action — which is what this game is all about — is pretty good fun. There is an odd difference between the sharply depicted enemy fleet and the disappointing primitiveness of your own ship that, I've got to admit, doesn't matter once you're into the fast and furious action.

It's not a difficult game to play. You'll find that you can get some high scores without it being too demanding but there is something addictive about it. It's not going to be one of the games of the year but a lot of people are going to like it a lot. It's certainly worth giving it a try (in spite of the gush on the inlay!)

Z.M.S.

Price: £8.95 6 (c) £14.95 (d)
Graphics: ★★★
Sound: ★
Playability: ★★★
CCI Rating: Crisp

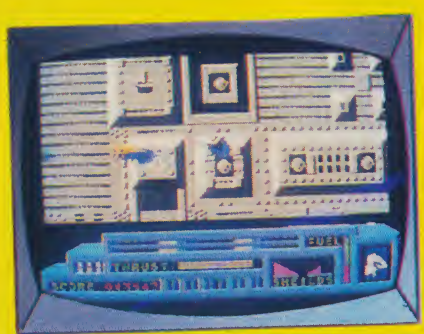
The Equalizer — The Power House

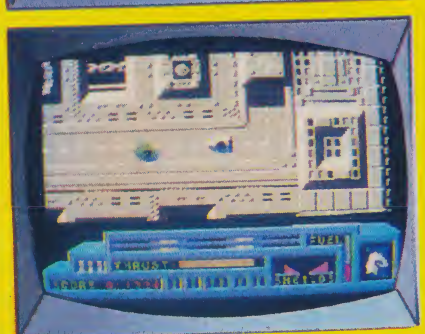
CRISP

The Power House who are releasing titles for the princely sum of £1.99 have improved the quality with this one. No, it's not about some vigilante blasting away with his "Equalizer". In fact it is totally different from that. You are back in Paleolithic times — the stone age to you. You have to rescue your girl friend and climb up the Darwinian evolutionary timescale to get to her. It isn't easy. There are lots of nasties out there, even things like prehistoric snails and lizards want to gobble you up and of course, as was natural, as time passes so the organisms get more complicted and you have to compete for your existence with animals and birds. You get fruit that when picked moves you along a level. There are 18 different side to side scrolls and you also have quite a few other natural hazards to avoid along the way to your evolutionary destiny.

By no means a bad game this. It's got some nice graphic touches and a not too disagreeable soundtrack. For £1.99 it is something out of the ordinary and must be excellent value. Buy it.

CCI Rating: Crisp
Personal rating: 6
Value for money: 8





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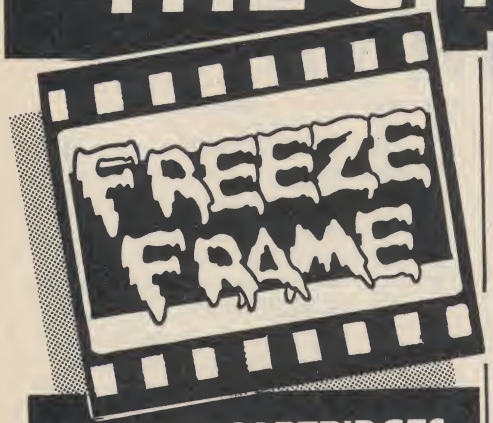

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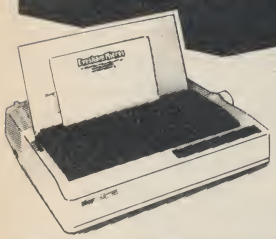

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C16 Storm — Mastertronic £1.99

IFTY

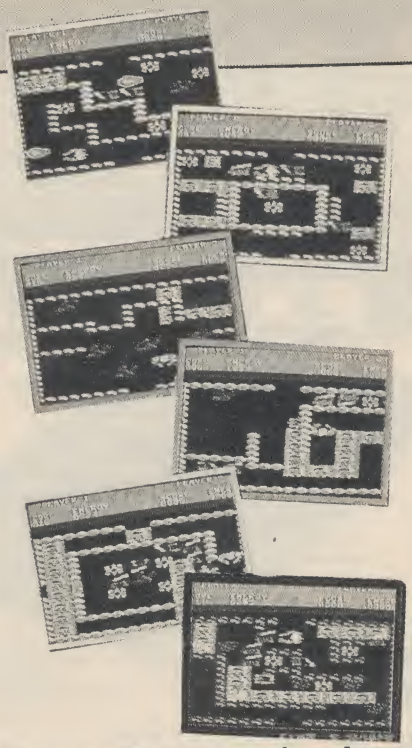
Storm is Mastertronic's attempt at a Gauntlet style game. I suppose I expect too much for £1.99 though, because this isn't what I hoped for — with pretty ugly, chunky graphics and rather tedious gameplay.

The story might set you in a fantasy world where wizards and warriors exist and you must rescue a fair maiden. Well, that's not exactly the story I suppose, so here it is.

Corrine your wife has been abducted by Una Cun, an evil warlock-like being, and you, with the aid of a wizard friend, Agravain Undead, must rescue her from his lair.

As you play you are confronted with Una Cun's evil minions who drain your energy, you must shoot them, and the generators that they appear from. If you re-enter a room the generators appear again so you have to watch your step. You can also pick up armour that protects you slightly, from your enemies.

Other things to watch out for are masks — that give a kind of smart bomb effect, scrolls and amulets — which destroy the evil minions temporarily, and food and water which replenish strength. There are traps which you can spring, that are either good or bad, and there are keys to collect.



There is either a one or two player option; two players making a better game, and when all is said and done, even though I don't like this game, it has a whole lot going for it.

The worst thing about this game is its ridiculous system of moving, which involves having to push the joystick left or right, in the required direction and then point it forward to move. Oh dear, we can certainly do better than that, Mr Programmer can't we?

C.K.

Price: £1.99
Graphics: ★★
Sound: ★★
Playability: ★★
Rating: Ifty

Summer Events

After almost a year of waiting we've finally received a preview copy of Summer Events. From first impressions it looks very good indeed, well up to Winter Events standard!

The finished copy should contain six events: Platform, Diving, Pole Vault, Cycling, Kayaking (canoeing), Steeple Chase and Butterfly.

As a professional platform diver you have two attempts at dives and can choose which type of dive you want, from a choice of four: forward, this is a normal dive with you facing front on the platform; backward, which starts you off with your back to the water; inward, which throws you forward and spins you inward again; and, inward, which starts you off backward and throws you forward.

Cycling is a race against the computer or another player along a length of road. To move you push your joystick in the direction shown by an arrow, which spins around. As you follow the point of the arrow you start to go faster and as it goes faster you begin to lose control of your man.

Butterfly is the other game we were able to see. It contains excellently drawn large sprites, and smooth, fast animation. You can compete against the computer and this game approaches swimming in a very different way from previous games. The swimming action is very accurate and this is a really good event.

From what we saw in this exclusive preview (thank you, Karen of Anco) this looks well up to the usual high standard of Kingsoft and Udo Gerz the ace programme who created Winter Events. We'll try to give you a full review in the next CCI. This game could be sensational. It looks as good as a 64 product.

C.K.

Gun Law — Mastertronic £1.99

CRISP

Gun Law is Mastertronic's first attempt at a game for the C16 that involves Commando style tactics.

You are the last soldier left after four months of fighting the invaders. All the civilians have fled, leaving you with the task of surviving, on your own, with one machine gun as your companion.

Fight your way through five levels and then . . . And then it doesn't say what you get or what you must do next. Nice bit of incentive to complete the game eh?

You start the game off with four lives and get an extra life at every ten thousand points, by no means an easy feat.

As you hide behind trees and run for cover, men suddenly materialize before you — they don't come from the very top of the screen but jump out at you in ambushes. Huts, pods

and trees block your path and you must alos dodge the occasional bullets from the enemy.

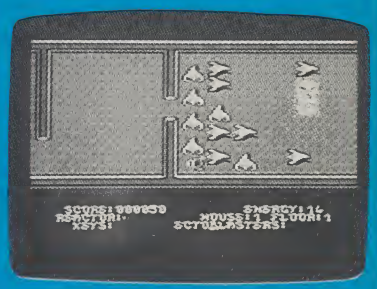
Your man runs along at quite a pace and the scrolling of the screen is fast. Although your score is not displayed during play, when you die it is shown, along with the number of lives you have left.

The graphics of this game are quite good with chunky, though well animated, defined graphics. The sound is okay though rather sparse.

Another good release from the boys (and girls, don't want to be sexist), at marvellous (no relation to poor old Marvin Hagler) Mastertronic.

Price: £1.99
Graphics: ★★★
Sound: ★★
Playability: ★★★
Rating: Crisp

PHANTOM



Horrific News from Courtney King!

AWESOME

Phantom..... by TYnesoft....

It's positively frightening...How good this game is....It is the kind of game we have been waiting for since Winter Events...This is a game that uses the underrate C16 to the limit.

I am writing this in the dark and sending it to C.C.I. in invisible ink...Because I don't want the Phantom to get me... Phantom is maybe a Glove clone, even a Gauntlet clone.It is haunting and totally BRILL.....Yea,Awesome...

The object of this terrifying game is to clear four buildings of (whoo) ghosts using a high powered laser. No,it is not Ghostbusters.It's much better.Each house is made up of four floors.Each floor has one or several transporters.These are the (eeek!) ghosts' link between this world and hell!If you destroy the transporters no more ghosts can arrive to hinder you.(Help help, I think something cold has just touched my neck!)

Various objects are to be collected such as keys,fuel - which can be fast and powerful laser fuel.speed fuel which is extremely fast but weak and power fuel which is extremely strong but slow.There is also food, which restores your ever decreasing energy and glucose pills which speed you up for a limited period.(Did you just hear a door creak?)

Now we come to your gadgets - first there is a radio immobiliser which broadcasts a high-pitched signal and stuns the ghosts ans second there are ectoblaters that act as a smart bomb, clearing your surrounding area of ghosts (I wish I had one here now.There is something giving me a nasty chill up my spine.)The smart ectoblaster gives you a welcome breather from the attentions of the ghosts.

Phantom is played at a very fast rate and you must fathom each level's problems (by oausing the game) before tackling it.The scrolling is spirit smooth and as fast as a flash of lightnibg at midnight. The graphics of the ghosts and the transporters are particularly good.(Why is the hair all over my body standing on end?)

AS you finish the fourth floor of the first house, the next house is loaded up and you begin your fearsome job of exorcising the nasties once more.This time, however, with totally different surrounding graphics and a new load of ghosts and transporters. To get a look at all the types of ghosts available instead of rewinding the tape when you die, you just load up the next level.You will get the same layout as level one but, believe it or not, another set of dofferent ghosts.

Loading up the houses takes about ten seconds and is no hassle at all. (It is only the way the curtains wave even on a windless night that is the problem.)As you play, a tune is banged out in the background and it totally suits the pace of the game.It is what I call a haunting melody...

I have always said that mutiloading games are the best and have been proved right with Winter Events,Jet Set Willy II and European Games.So come on you other comapnies, why don't you give it a go...not to say a ghost of a chance...

This game is totally ghoulish...sorry I meant awesome.Could it be bettered? Well, what I'm really hoping is that Anco's 64k rampack sells by the thousand Then Tynesoft could really go to town and make Phantom 2 that would blow everybody's minds.I've already heard that if this game sells by the billion as it should,Tynesoft will bring out additional levels.As it is it must find its way into everyone's favourite game chest.You will miss Phantom at your peril...

I Hope you can read this.I am typing it in the dark.The candle has just blown out and there is the clanking of chains and I'm beginning to break out in a cold sweat.I'll have to get back to Phantom.

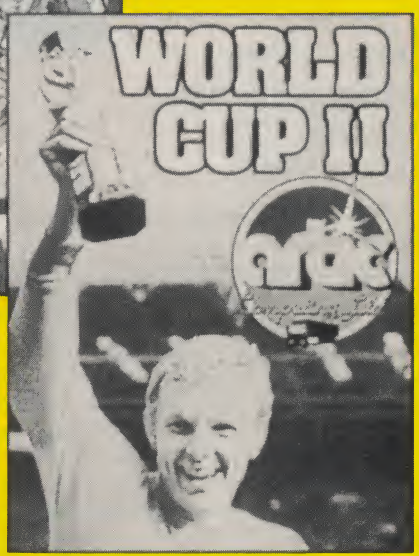
Graphics **** Sound**** Playability*****

Price £6.95 Rating AWESOME

MEGA REVIEW

C64 C16

MEGA



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Micro Value is a new budget label set up by Tynesoft. There are many versions on the full line of computers and each represents great value for moneh. The C16 version is no exception to this with two new releases, one old game of exceptional quality, and only one naff game as a filler.

The first game on the list is US Drag Racing, which was to be released singly at £6.95, is a flashy, souped up version of the familiar Decathlon type game. Your car, and your opponents, are pushed into the starting position on the grid, you must then rev your engine, and a the light changes to green, get into gear. You keep building up enough revs to change to a higher gear and as the race ends, your parachute is ejected to slow you down. You have six opponents; Pizton, Tex Turbo, Clint Clutch, and others with similar automobilish names, each with a more powerful car than the last. A good game with colourful graphics and many pleasing frills.

3D Maze, the next game, is a variation of Pac Man. It actually puts you inside the maze, with corridors receding into the distance and you must guide yourself down them, watching out for the ever present Maze-Monster/s. You have a map to guide your way, but there are many variations of the game to ensure you don't rely on this as your means of movement. This game, though simple, is extremely addictive makes an excellent addition to the tape.

Apollo Rescue is the only real no-no on this tape and even this is mildly addictive for a while. It involves you having to reassemble the part of an Apollo 16 rocket. You are hindered by many aliens and these are very fast. You must pick up each piece of rocket in the correct order and then go on the next planet and get more pieces. In between this planet hopping you must retrieve satellites floating in space, using a robot arm. This is the most boring game in the compilation. New we come to Gunslinger, the best game of the tape. You are Jesse James, a deadly bounty hunter. To increase your money you've decided to hunt down outlaws and collect the reward money. The outlaws hide out in doorways and on roofs but you can aim by pushing his gun arm up or down. This game doesn't sound like much but it is totally addictive and is a really great game.

If these games were £1.99 each I would rate US Drag Racing as Crisp, 3D Maze as Crisp, Apollo Rescue as Iffy-Dodgy and Gunslinger as Mega. From these ratings judge for yourself how good the value of the compilation is. I'd rate it as 'Amazing'.

C.K.

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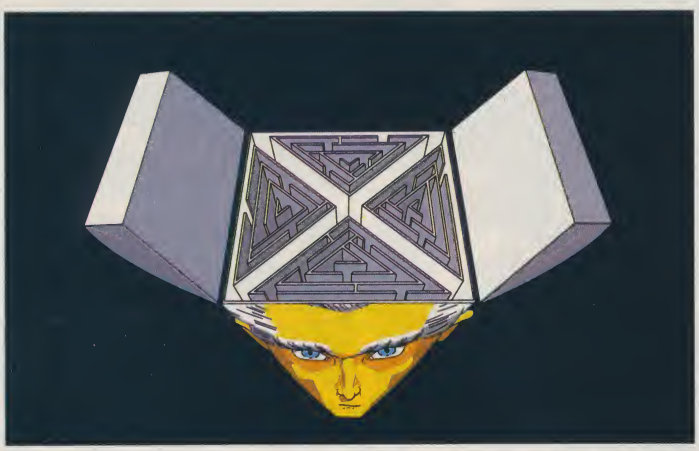

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CLIMate

The cleverly named title of this software product refers to an AmigaDOS utility rather than something connected ith the weather. Its function is to control and manage disk and disk files more easily and effectively. This is done through a well-designed Intuition front-end making full use of the mouse with the sole purpose of keeping the unskilled user away from the Command Line Interface, otherwise known as the CLI.

I was lucky enough recently to meet the two programmers responsible for **CLIMate.** Chris Nicotra and Dave Milligan allowed me a sneak preview of the unfinished project and I was suitably impressed at that point. Now that I have had the opportunity to look at the finished article, I'm even more impressed.

The basic construction of **CLIMate** is two columns — a source and destination. The respective disk directories appear in each column, selection of the drives is all done by the mouse. Support is given any AmigaDOS *trackdisk* device — which means that a 5.25 inch drive, ram disk and hard disk as well as the conventional 3.50 inch drives are usable. All the file manipulations are carried out by selection with the mouse. Thus there is no need to enter the file names, even changing disk directories or disk drives is accomplished by clicking the mouse.

When I say everything *'is all done by the mouse'* this includes renaming files and deleting files — although naturally the user does have to type in some file names for this task, it is the selection of the AmigaDOS operation which is made by the mouse. Another useful point of these file maipulation is the support given to pattern-matching. This is a very powerful feature of AmigaDOS and is something that all users would do well to study since pattern-matching offers considerably more than those provided by MS-DOS.

Printing of files is another function which **CLIMate** excells in. Once more complete control is given by the mouse and the user can closely control the format of the output.

Unfortunately there is no print detection of binary files — this is important as any AMIGA user will inform you since these generally contain large number of form feed characters. Attempting to print a binary file results in large volumes of paper being sent through the printer before the user realises what is going on! Hopefully this will be rectified in the next release of **CLIMate.**

One of the most interesting uses that **CLIMate** can be put to is the *showpic* function. This allows the user to display files containing an IFF image — IFF is a standard AMIGA file format for audio, text or visual data and allows full interchangeability between different software products. The IFF file display is selected entirely by mouse and should the file contains a colour table, then some manipulation of the colours is possible.

A disk can be formatted from within **CLIMate,** although this is restricted to DF0: and DF1: drives. Should the user want to format a 5.25 inch disk then this drive should be made the first external drive. In other words, this drive should be connected to the system and any others daisy-chained to this unit. In my own system the 5.25 inch drive is configured as DF2: and forms the last drive in the floppy *chain.* I prefer to operate it this way because of the vagaries of AmigaDOS when using the 5.25 inch drive. I mean by this the problem of the system not recognising when a 5.25 inch disk is changed and I find it easy to operate this drive when formatting disks to be at the CLI level.

It is difficult not to compare **CLIMate** with its nearest competitor **ZING!** in the AMIGA disk utility field. The two products use an INTUITION front-end although **CLIMate** makes greater use of the mouse, an integral part of the environment. However, as things stand, **ZING!** provides a greater number of user facilities, for example the screen dimmer and task monitor. I found it very difficult to choose between the two, for **CLIMate** is probably easier to use.

Prospective purchasers should realise that **CLIMate** will run under WORKBENCH 1.2 only — ensure you have this before parting with any money. Knowing Chris Nicotra and Dave Milligan, they are not likely to let the grass grow under their feet and product enhancements are probably well under way.

I would suggest that readers view and use both Zing and **CLImate** before arriving at their decision. Try to ensure that the conditions under which the demonstration takes place are similar to your own system configuration in terms of the hardware. Also consider the structure of your disks — are they mainly single files or do they contain multiple levels of directories. Check them out operating with a hard disk — OK, you might not be lucky enough to have one right now, but prices of these are steadily falling and the great day may be closer than you think. The mention of hard disks bring me to a neat conclusion because for the moment I reserve my opinion on which is the better. However, I will say this — whichever the two brings out a hard disk backup utility which will spool between DF0 and DF1: thus making the process multi tasking and quicker gets my vote!

UK Distributor: Precision Software Ltd, 6 Park Terrace, Worcester Park, Surrey KT4 7JZ. Tel: 01-330 7166.
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Jumpdisk

Jumpdisk is the first of what is bound to be the movement toward the future development of Amiga information — a magazine on a disk. With everyone who owns an Amiga by necessity a disk drive owner too, it makes a good deal of sense to issue a magazine that can be read directly by the machine to which it is intended to offer information. In addition, of course, it can offer programs without the tiresome requirement of to type them in. Of course, disk or cassette based publishing has been tried before — without a great deal of success it has to be said. However with the obvious usefulness it has to the Amiga, for this computer it will probably turn out differently. What will decide finally will be the interest that the disk offers. In this case, with Jumpdisk which is the first to reach outside the US, it certainly appears to be likely to attract a substantial number of buyers.

It is very easy to enter and has two menus -- an article menu and a program menu. The first describes what can be found on the disk and the second lets you get at it. As with any magazine there has to be a balance of different interests and on Jumpdisk it varies between simple arcade games and the famous Eliza, where you can have a conversation with the computer, to articles about technical aspects of the new 2000 Amiga. It has to be said that these articles do not go very deep into the subject and are more for the general reader than the expert in search of deep technical enlightenment.

I think that the audience for this type of publication will increase but will be somewhere between the newish 1000 owner and someone who is starting with an Amiga for the first time. If you are among that group then Jumpdisk will certainly prove of interest to you. It is to be published monthly and is very reasonably priced at £8.95. However one of the valuable guarantees is that if the disk is defective it will be replaced at once.

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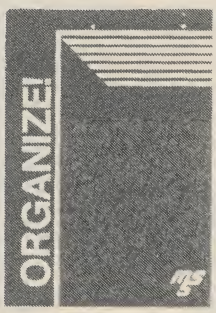

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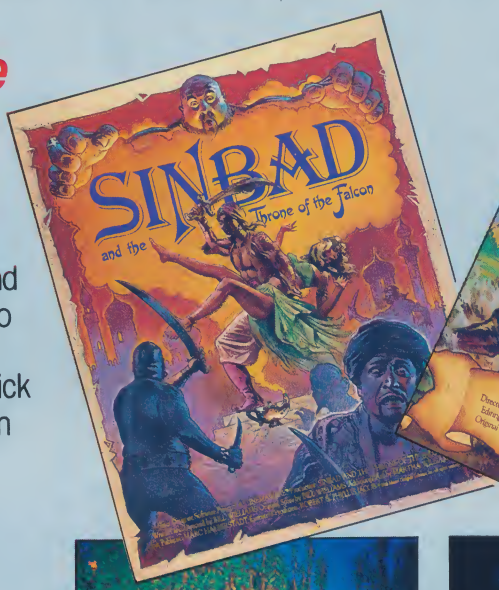

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'Sinbad and the Throne of the Falcon'

Are computer buffs sexless wonders? Are they really propeller heads who after a hard night slaving over a hot keyboard simply retire to bed and dream of printed circuits? Are they for that matter completely lacking in a sense of humour and merely interested in the more serious things of life such as databases and sub-routines. Do they have read only memories? If on the other hand, they actually relax for a while and indulge in something a little less heavyweight like games, does it have to be mindless, kill-everything-in-sight-with-the-finger-never-off-the-fire-button frenzy? Well, I can tell you one company that does not think that any of the foregoing is totally true. That company is Mindscape. It has got to be said that when you are talking Amiga games then you are — this far in the lovely little machine's brief career — without doubt talking Mindscape. In the year or so that the Amiga has been gaining a place in the range of computers that the public can really use for life enhancing activities whatever they may be, Mindscape — not a previously lapel grabbing name to most computer users — has emerged with a certain sparkle that has made all other home entertainment software houses look pretty dull. I suppose to be fair, Electronic Arts might just be excepted from that satisfyingly sweeping overstatement. E.A. have, after all already brought out some really excellent products to grace the Amiga's colourful screen. But I repeat, when you are talking Amiga games, you are really talking Mindscape.

One of the reasons for this is that as you will know from my frequent complaints, there are not that many Amiga games as such. Most have been quietly lifted from other formats, generally the 64. So it has not been too difficult for someone, in this case Mindscape to make an impact in such a sparse field. And it has achieved that impact with only two major games "Defender of the Crown" which you are no doubt fed up with hearing this magazine praise and now what I will predict

will be its second big success "Sinbad and the Throne of the Falcon". This another release in Mindscape's much and worthily vaunted Cinemaware series in which the graphic wonders that the Amiga does provide are beginnng to be adequately if not yet excellently exploited. We still await the highly-touted 'King of Chicago' with some impatience.

It has to be said that "Sinbad" is not a "Defender" — but it does not set out to be. "Defender" was really an old fashioned strategy game, set conventionally in medieval times with some delightful moving style pictures that made wide-eyed crowds gasp. I don't think that "Sinbad" is going to achieve the same immediate stunning effect. First because we have already seen "Defender" and we are looking for something that will put even that in the shade. Second, because, although the graphics still bear that vivid Amiga stamp they are by no means highly sophisticated or employ high technology style tricks to make us feel we are watching something excitingly new as it must be admitted did "Defender".

Sinbad might indeed have been written on another less complex or advanced computer. Much of the "action" take place with relatively still graphics, and the techniques used — answering questions from a multiple choice are as old as adventure games on any computer. However, it's clear that the creators of "Sinbad" have set out to build something else. They have I believe succeeded in writing what is really the first graphic adventure for the Amiga and with the lack of interesting games software about, they will probably reap a rich harvest for their efforts.

For "Sinbad" clearly contains one element that will make it popular

Sinbad continues here...

among almost every age group. It is fun. Further, although its graphics are not highly sophisticated and it gives the appearance of an almost children's book style presentation, it is not at all easy to complete. The cartoon-like pictures can easily fool you into thinking that it is going to be a pushover to complete. It isn't. And I think a great many people are going to get a great deal of pleasure trying to work out exactly what you, as Sinbad are seeking and the complicated way you have to travel to find it.

In Sinbad, you find yourself in some mythical land that just might be the site of the Arabian Nights. You have a ship and you must travel on some mysterious quest, gathering a crew as you go. As you reach different ports of call — you select them for a changing menu — you are allowed to speak to certain characters: Prince Haroun, a Princess, Libertina, a Mysterious Gypsy and so on. They will have conversations with you, through cartoon style bubbles which you can answer from the multiple choice menus. These conversations are always the same when you meet the same characters in different places but there is a certain order of question and answer that you must discover, probably by trial and error, that will lead you on through to the heart of the mystery.

Interspersed with these conversations are a number of apparently random attacks on you by swordsmen or pterodactyl-like birds. You have arcade style actions to perform to beat off these either with what looks like a scimitar or a cannon respectively. If you lose in this or other cases, things go badly for you and either your or your beloved Princess are slain and back you go to the beginning. Although pleasingly you are memorialised in a tapestry.

This whole adventure is very far from as simple as it seems. It also has a quite humorous turn to its conversations and an agreeably adult approach to the attraction of the sexes. The scenes with the Gypsy girl can end — if you make the correct responses — in some literally burning kisses that with Amiga graphics are going to cause quite a sensation.

I have deliberately not revealed too much of what the game is about. I am not sure how much anyone will enjoy it once its secrets are fully understood. I personally find that the game continues to be a challenge, for it offers, I am sure, a variety of different ways to achieve the same final result which are worth searching for in their own right. I also believe that as a game, "Sinbad" is probably better or at least more enjoyable that "Defender". I like its exotic feeling which I find more attractive than the coarseness of medieval England. I like its humour which was not highly noticeable in "Defender". I think that "Sinbad" being a touch sexy is not likely to be a put-off either.

My bet is that the Amiga 500 will get out in substantial numbers before the software houses, especially the games companies, will have really got to grips with the potential of the 16 bit blitter blasters that could really take the 68000 games market by storm. So "Sinbad" will gain a substantial market and please a lot of people who are just beginning to appreciate the delights of the mouse driven powerhouse that is standing there on the table just waiting to amuse them. As an Amiga product, "Sinbad" is not going to dazzle like an exploding super nova, but it does offer some tremendous fun. Can even a technomad, keyboard basher really turn that down?

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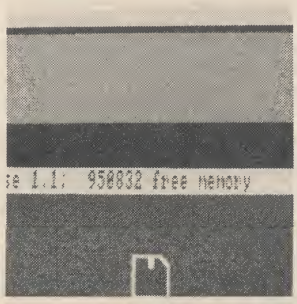

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SCRIBBLE! VERSION 2.0

I first reviewed this word processor for the AMIGA in the August 1986 issue of **Commodore Business and Amiga User** together with **Textcraft**. Since then I have continued to use **SCRIBBLE!** as my AMIGA word processor without any problems and as time has gone on I have begun to fully appreciate the strengths of this hardward/software combination. For example, the instantaneous reformatting of documents — the use of onscreen fonts to considerably enhance the final design of documents — the very powerful ability to cut and paste between windows and not least the overall operational speed. It is no exaggeration on my part to state that **SCRIBBLE!** has paid for itself in terms of increased throughput. I mentioned in the previous review that the requirements of authors and journalists are very different from those of a secretary and this product is one of the very, very few word processors that can cater for either group of user.

In the short space of time that has passed since I first obtained **SCRIBBLE!** (July 1986), Micro-Systems Software Inc., the originators of this product have not been idle and an updated version (Version 2.0) arrived through the Donald letter box. This version makes up for the deficiencies apparent in Version 1.01, namely a **spelling checker** and **mail merge** facility. The former is obviously of great value to persons such as myself who tend to produce large columns of text whilst the mail merage would be of interest to commercial users whose output tends to be repetitive in nature. There are some additional features too.

My own AMIGA system now contains 40Mb hard disk, 2.5Mb RAM, an 8.0MHz 68010 processor together with the software developers version of version 1.2 of Workbench, must qualify me as a *power-user,* so any software is likely to have a serious workout in addition to testing compatibilities with the 68010. This version of **SCRIBBLE!** in common with its predecessor had no problems and installation onto the hard disk proved painless. In particular I looked for compatibility with files created under the earlier version and it was a considerable relief to find that these were not chewed-up or mangled, a contrast to conditions which seems to be accepted practice in software updates in the MS-DOS world.

Dictionaries

The spelling checker consists of two dictionaries — a main dictionary and a user dictionary named **USERDICT**. The main directory consists of 40,000 words which provides an ample platform for users to start with. The spelling facility can be controlled down to an individual word, window or a complete document and is accessed from an additional menu strip on the screen bar. **USERDICT** can be optionally merged with the main dictionary to customise the latter to your own requirements or left as a strictly personal dictionary. One of the benefits of merging the dictionaries lies in an enhanced speed of checking future documents as the software does not have to search through both dictionaries.

In addition to the usual spelling checker options of ignoring the word, learning it or editing the spelling, this spell checker will also provide a display of the next few words in the dictionary. For example, if you requested the software to **guess** the word *considerable* — the spelling checker would display in addition to *considerable*, the words *consider* and *considerably*. The spelling checker is able to recognise the **root** of a word. Operation of this part of **SCRIBBLE!** is fast — used with a hard disk it is usually a case of the system *waiting for you* rather than the other way around. To give you some indication of how fast **SCRIBBLE!** actually is I requested a word count of a document containing circa 94,000 words — it took *less than 3 seconds* and this also included the total number of characters! The only two items I would like to see now are the inclusion of a thesaurus and user access to the main dictionary for deletions and word manipulations using character *wildcards*.

Mail Merge

The other main addition to this version of **SCRIBBLE!** relates to the **mail-merge** facility. Mail-merge allows the creation of standardised text to be linked with another word processor file. Thus a letter which was to be sent to many respondents would be typed once with the names and addresses held on a separate file which could be a database or spreadsheet. By calling up the **mail-merge**, the software would read the text (in this instance names and addresses) into the letter document and then print this out. The process would repeat itself until all the names and addresses had bee read and printed out.

However, **SCRIBBLE!** allows more than just a simple *read variable* as these are termed — there are also *set variables* and *ask variables*. A *set variable* will insert an unchanging piece of text into the main document in several places, for example the current date or a product reference number. An *ask variable* causes the process of merging to pause and the user is prompted for a response. The text of the prompt is that which is defined in the *ask variable*. For example, this could be a request for the signatory's name or department. Another use for *ask variables* could be in response to filling in a form by unskilled users. The potential is enormous and simply a matter of using your imagination.

The other enhancements to **SCRIBBLE!** include improved system performance under version 1.2 of the Workbench additional commands using the special AMIGA keys, single word deletion, true backspacing and improved visual displays during file handling. These are just some of the many differences between version 2.0 and the earlier version of **SCRIBBLE!** Micro-Systems Software have *made a good word processor into a GREAT word processor* for the AMIGA.

B.D.

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A major new release of Lattice C for the Amiga is now available from Roundhill. Version 3.1 includes an enhanced C compiler, a full macro assembler, and a new, faster and more efficient linker. The library has over 255 functions (over 100 more than standard Amiga C), with many more functions written in assembler for efficiency, faster IEEE floating point routines, support for Amiga FFP floating point, and multitasking support via *fork* and *wait*.

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New compiler features include direct support of memory type specification, custom segment names, and new addressing modes that can help reduce load module size by more than 20%. The linker will support intermixed base-relative and pc-relative addressing modes.

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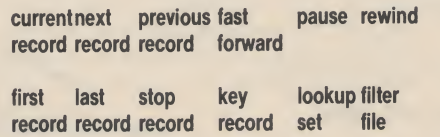
Amiga SUPERBASE Personal

The long and anxious wait is over and Precision Software's blockbuster SUPERBASE is now available for the AMIGA. This is the second applications software release from a leading British software house and in each case the wait has been worthwhile. Make no mistake, SUPERBASE is destined to make its mark in the AMIGA world for it is very much a well disguised wolf in sheep's clothing. The version of SUPERBASE for the AMIGA is far removed from its namesake on the 8-bit generation of Commodore machines. Not only is it extremely fast in operation but SUPERBASE imposes very few limitations on the user in terms of sizes of fields, records and databases. Indeed, in common with its predecessor any such limitations are at the hardware level and it is memory and storage space availability that define the boundaries and not the software. Examining the published specifications and seeing figures like 16 million records/file, 999 indexes/file and no limits on the number of files/database or files/record seem to bear this out. The other major feature of SUPERBASE is that it is now a fully *relational database* — which means in simple terms that **any** SUPERBASE or ASCII file can be accessed and used irrespective of where it is located.

The product is supplied on a single disk together with a dongle and a manual that runs to over 200 pages. The dongle fits into Port 2 and is used during the loading cycle; the dongle supplied with LOGISTIX can replace the SUPERBASE during actual use, but not during loading. In any event I found both dongles to be totally innocuous on my system and I only wish other software houses would adopt this approach when they feel that software protection is necessary. The manual is written to the usual exemplary standard under the guiding hand of Dr. Bruce Hunt, an acknowledged SUPERBASE expert and provides the range and depth we have come to expect from Precision Software product manuals. There are three main sections and no less than six appendices — the first section is a familiarisation with SUPERBASE, the second section serves as the core of the manual in tems of using the product and also provides no less than **three** tutorials! The final section functions as a quick reference guide to SUPERBASE. In the appendices are lists of error messages, ASCII codes, reserved words, etc., as well as details of the forthcoming SUPERBASE Professional product. This featues a complete programming language, word processor and applications builder.
in the selected direction very quickly and when I say quickly I mean like fast.

Looking at the menu structure there will be many database users particularly 8-bit SUPERBASE users wondering what half these functions are for. If you are new to relational databases then the feeling of bewilderment is probably quite natural. However, the manual covers these points with both clarity and examples and after a few hours use you begin to appreciate the width and depth of this software. The first point that strikes the newcomer is ease of constructing a database. This brings into effect the many requestor panels which are very simple to use, in most cases rendering the presence of the manual unnecessary. Error trapping on these panels is fundamental to the whole system and I found it impossible to get the software to fall over by attempting to input character data into a numeric field. Everything other than actual data entry within SUPERBASE is founded on the use of the mouse. This makes for some very slick operation by an experienced mouse user and once more the robustness of the software is checked by keeping ahead of the screen with the mouse.

The cassette or *control* buttons as Precision term them are organised as follows:



There are two major benefits stemming from the use of a cassette recorder interface. The first is the simplicity since all users will be aware of the basic functions of these, thus the product learning urve is quite short. The second benefit lies in ten speed of operation — press the *rewind* button and the file is scrolled

The front-end of SUPERBASE employs the familiar mechanism of a cassette recorder. Thus we have such components as fast-forward, rewind, playback all encapsulated in a row of buttons at that base of the screen. At the top of the screen the reassuring menu bar reminds the user that INTUITION forms the other component of SUPERBASE. The basic menu structure appears as follows:

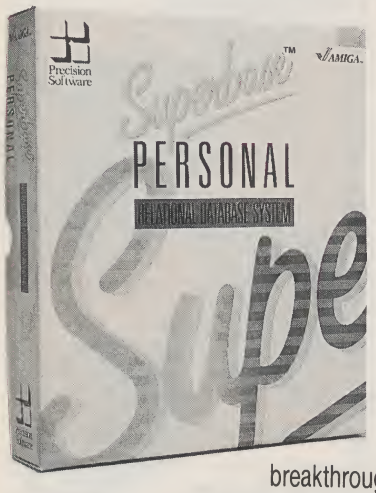
Project	Record	Process
New		New
File	Edit	Query
Index	Duplicate	Remove
Open	Remove	Import
File	Save	Export
Fields		Print
Index		Labels
Query		
Close		
File		
Fields		
Edit		
Save		
File		
Query		
Remove		
File		
Index		
Quit		

The range of control over the data given by SUPERBASE is highly detailed. Data can be displayed in either *tabular, record* or *form* views with complete control over the number of fields to be

CONTINUED ON PAGE 93

The Best in Amiga Software from Precision Software

SUPERBASE PERSONAL



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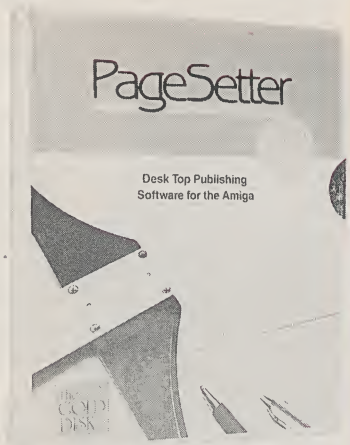

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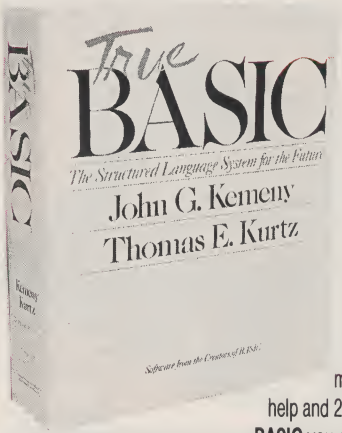

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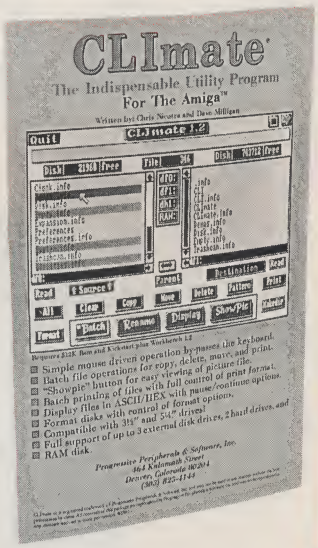

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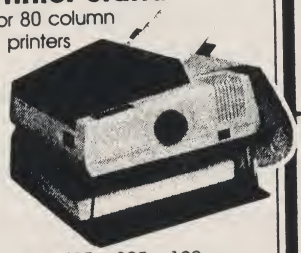

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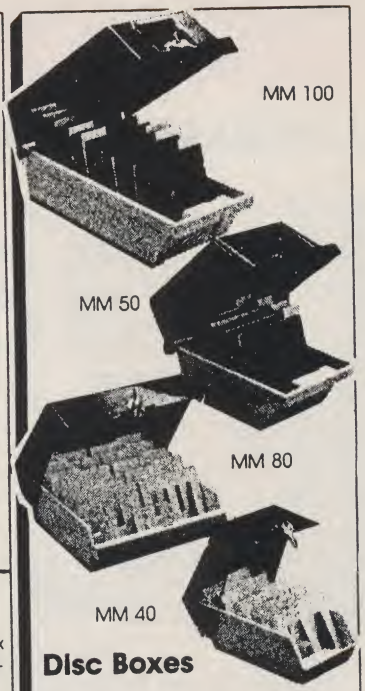

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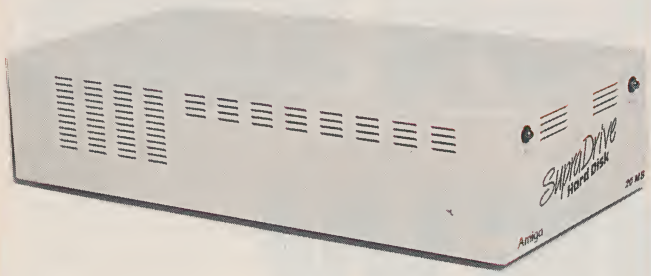

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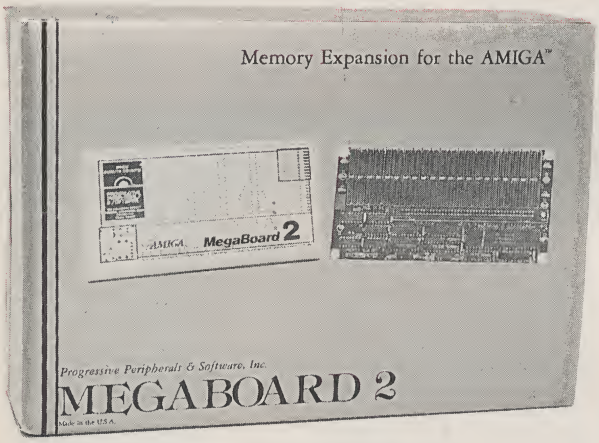

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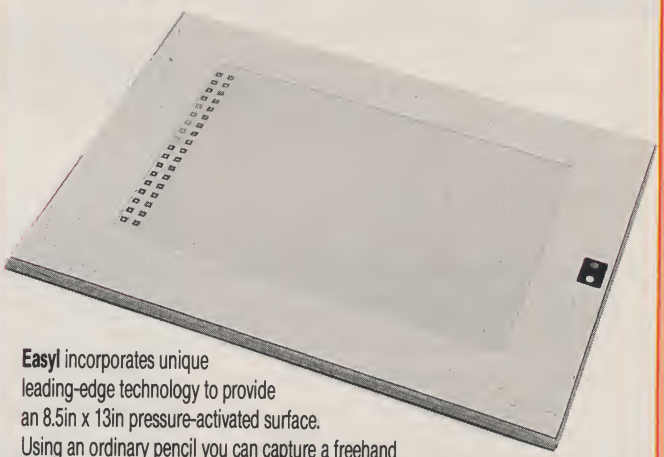

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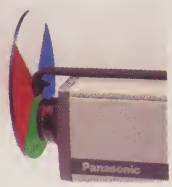

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included and their length. Since SUPERBASE is a full relational database, fields from oter database files can be included at the same time and this new file so created can then be displayed, printed out or saved to disk. Records displayed in *table* form can have a width of 255 characters which equate to three full screen widths. Scrolling across is done by an INTUITION scroll-bar at the base of the screen. This form of display is useful in situations where a large number of records needed to looked en masse and complete screens can be refreshed by using the *paging* option.

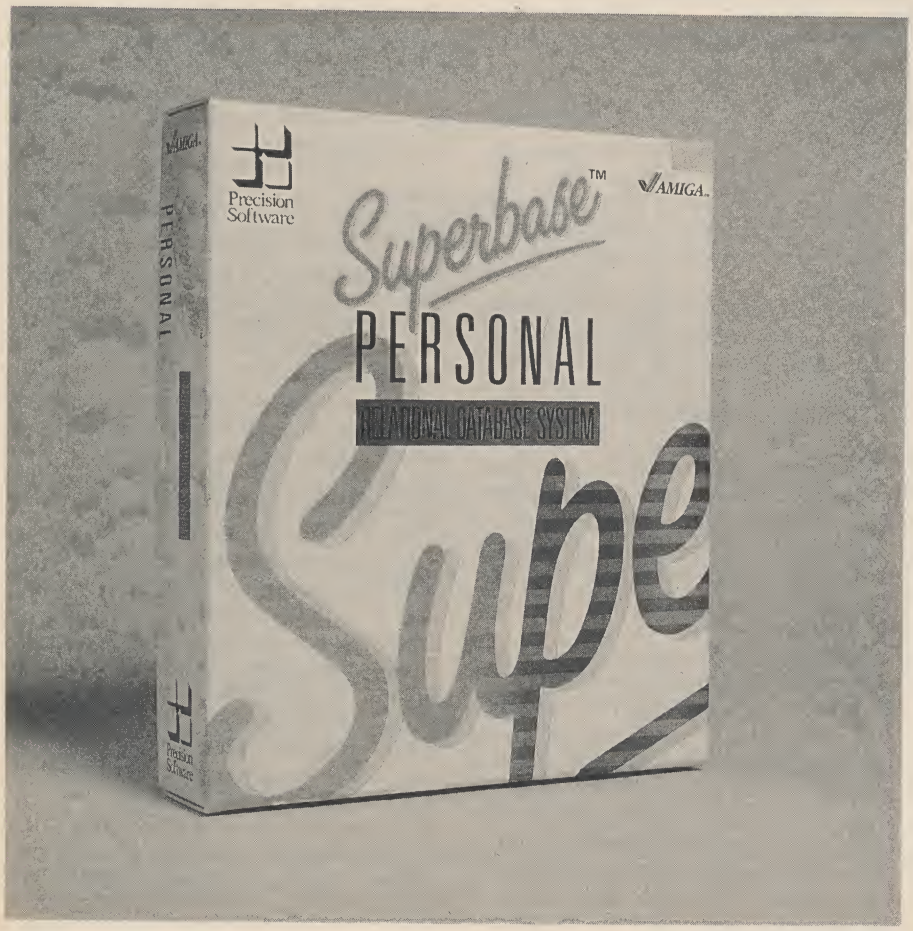
```
DesignedBy <          > Year <          >
FireboxLen <                            >
   FboxSurface <  > TubeSurface <  >
   HtngSurface <  > GratSurface <  >
BarrelLen <                             >
   TubeDimn <    > BoilerDimn <    >
   TubeNo <      > DiagramNo <     >
            Pitch <
  external      CylinderNo <          >
      Motion <                          >
      CylDim <                          >
BuiltAt <                               >
```

Alternatively, fields can be left out of the *forms* display where a record has large number of attached fields — the emphasis is firmly on flexibility when using SUPERBASE. This type of display is also used for data entry, thus the creation of ustion of customised forms is a doddle. In fact, one method of operating your database could be to have a master file ready with every single field you are likely to need and to draw from this as and when necessary.

This facility of being able to draw in data from other database files without going through an import/export procedure whereby the data is converted into ASCII, is the difference between a *relational* database and a *flat-file* database.

The *query* function lies at the core of SUPERBASE and is by far and away the most sophisticated function available to the user from the menus. It provides the means of producing very closely controlled formatted output from one or more files to a high degree of visual presentation. Query output can be sorted in any order and include several fields within the *order* part of the query. Thus many levels of grouping and subtotals in ascending or descending order are feasible — I warned you that SUPERBASE was powerful! The output from query can then be directed to screen, printer, ASCII disk file or new database file.

```
CylinderNo <> Cy1Dim <> Motion <>
BoilerDimn<> Pitch <> BarrelLen<>
DiagramNo<>FireboxLen<>
FboxSurface<>
TubeNo<> TubeDimn<>
TubeSurface<>
HtngSurface<    > GratSurface<    >
BoilerPress<                      >
BuiltAt< > Year< > DesignedBy< >
```



In addition to purely character and numeric data SUPERBASE can handle visual data in the sense of video captured or drawn images. This allows the user to build a pictorial database and use the picture to enhance an existing database containing factual data. I need hardly state the applications that such a facility offers — I will leave that to the imagination of the reader. But such an option places SUPERBASE at the forefront of database technology on a personal computer. From my own position as a technical writer, I can now cross-index my articles with a picture of the hardware item being discussed. This is another tangible benefit from the establishment of a defined file format (IFF) for the AMIGA. I suppose the next step would be to have an audio equivalent, for example a voice database. Not only would a personnel record have details of the person, but you could view a picture of him and hear his voice!

Unfortunately on this occasion space precludes any further examination of the facilities offered by SUPERBASE. There are many other aspects to this product such as password protection of files, multiple settings for date display, input data range checking, label control and definitions — it would take up the rest of this magazine issue! It is obviously essential to see a demonstration of SUPERBASE. One word summed up this product — **power**. SUPERBASE has brought the power of relational databases from the minicomputer level to that of the personal computer. Not only that, but Precision Software have also made the very important translation in terms of both operationa speed and ease of use with complete success — this is no mean achievement in itself.

Precision Software have put a lot of resources behind this product, in both development and technical support. I was pleased to be invited to take part in the beta testing of SUPERBASE and so I know a little of the effort that went into getting the product right first time. To my mind all of this effort has succeeded and not only is SUPERBASE the first fully relational database to be launched for the AMIGA, it is probably the **definitive AMIGA database.** Precision Software have clearly come up with yet another winner.

Price: £130.39 + VAT **B.D.**

Supplier: Precision Software Ltd, 6 Park Terrace, Worcester Park, Surrey KT4.7JZ.
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DAT — Recording Revolution

Sony, Matsushita, Aiwa, Sharp, JVC... names that dominate the consumer electronics world. Japanese companies, these and others, now control 90% of world consumer electronics. MSX apart, when they decide to bring a new product to the market, they rarely fail. DAT — Digital Audio Tape (see CCI April) looks like being the next major step in the entertainment business and may have effects elsewhere, such as computing, too. Aiwa has called it 'The greatest technical advance in the history of home sound recording' — a phrase to strike fear in the recorded music industry.

As the word digital suggests, DAT recorders use the binary language of computers to store and reproduce sound, a system which is almost completely immune to distortion, noise and imperfections. The result is music reproduction which equals or surpasses the quality of compact discs. But DAT can also erase and re-record. It is this ability, according to the music industry. which would allow wholesale copyright infringement and undermine the music business.

DAT machines should reach Europe and the US by the autumn of this year. At present they are to cost around £800 ($1150). That is thought to be a temporary price and likely to fall quickly to the present cost of CD players — around £175 ($280).

Like video cassette recorders, DAT players have a rotating head which reads the tape, VCRs read videotapes. Its cassettes which are about half the size of conventional compact cassettes, look like any tiny video cassettes they are almost entirely enclosed by their plastic case. The tape itself is based on the same magnetic metal powder material used in conventional cassettes.

Although the close-box design of the cassette will protect it from fingers and dust, DAT by nature is more vulnerable to deterioration than the compact disc (CD). This is because the DAT player's rotary head is in constant contact with the tape while compact discs are touched only by the laser beam which reads the pre-recorded music on the disc.

This reason, plus the current popularity of CD players and their lower price, leads the industry to predict that DAT will not supplant CD sales, at least not for many years. Manufacturers say DAT will replace analogue recorders and widen that market. Aiwa forecasts that DAT will enlarge Japan's domestic sales of tape recorders fivefold by the mid-1990s.

Although the cassette is mini-sized, the DAT deck is not. Aiwa's is 43cm by 42cm and weighs 11kg. The cassette is loaded by means of a front tray which automatically rejects an improperly loaded cassette.

A rotating head, or drum, has two smaller heads located on either side. When one of these heads is not in contact with the tape, audio signals are retained in the machine's memory. When contact is made, the signals are recorded.

The speed of the tape is 8.15mm per second, which is about one-sixth that of an ordinary analogue compact cassette.

It is planned to incorporate a "copy inhibit" system in DAT recorders. This is included in one of the LSI (Large Scale Integrated) chips and supposedly prevents direct digital to digital copying of CDs. However the LSI containing the 'copy inhibit' could be replaced by a different chip and nullify the inhibition.

Sony is already putting into production a DAT duplication system to allow up to 50 slave DAT recorders connected to a CD mastering system.

The international music industry already under substantial pressure as the home duplication of cassettes reaches horrendous proportions — reputedly 5 cassettes for every one sold — is fighting what looks to be an unsuccessful rearguard action against DAT in the US and the EEC. It wants to see 'spoilers' not inhibitors included by law. The US and EEC authorities have so far shown no interest in getting involved.

At present the cassette will record two hours of music, although Japanese engineers expect that capacity to expand to six hours. DAT also offers a large subcode capacity, which means that information other than music can be put on the tape. This information, which includes the number of pieces of music and where a song or speech begins and ends, will allow the user to do simple programming of his or her tape. Matsushita's machines, for example, can programme and play up to 99 selections in any order of play.

All the DAT machines also have a mechanism called Skip ID, which allows the consumer to programme a tape of, say, a radio programme, by skipping over all the narration and commercials.

DAT also has an intro-play function, which allows the listener to hear the first eight seconds of each song on the tape. DAT's dynamic range, which measures the sound range from the lowest to highest tone, is 90 decibels. This is slightly higher than that of CDs. The average listener, however, would not notice any appreciable difference between CD and DAT's sound quality.

A.M.

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MiAmiga File Version Version II

The original version of this popular database for the AMIGA A1000 was reviewed in the October 1986 issues of this magazine. Hot on its heels and taking full advantage of release v.1.2 of Workbench comes MiAmiga File version II. The differences between these two versions run to no less than 24 enhancements and are significant enough to merit a further examination of this product. Many of these differences have also been initiated as a result of user feedback to the supplier through experience in the field.

MiAmiga File is a flat-file database using many of the elements of Intution for ease of use and accelerated learning and acceptance by the user. These elements include a display based on the concepts of screens and windows together with usage of the mouse to select choices through *gadgets* and *requestors*.

The database directory now provides details of the individual file sizes in bytes and date of last access, the directory window also scrolls in either direction under control of the mouse. Scrolling from end to end of a long database file has speeded up considerably — another direct benefit of v1.2 Workbench. Drive path setting is made very much easier with direct support for hard disks, RAM drive and floppy drives beyond the *df1:* unit.

The introduction of a *mail-merge* facility now means that data is fully portable between applications since it can now be sent to the disk in ASCII format. The control over the format is complete and extends to record sequence and selection criteria — database reports can also be written to the disk as ASCII files. The ASCII files are specifically designed to engage cleanly with those of **SCRIBBLE!**, the current leader in word processors for the A1000. The *file save* function has been simplified and the user does not have to name the file if it is already open and in use.

On the original version of MiAmiga File the printing from the *form view* only produced a 5 line mailing label, this has been increased — indeed the only restrictions that pertain to labels are largely those limitations imposed by the printer in use. Overflowing of columns on the printer is handled by printing the residual data on the following line correctly formatted. The whole printer output function has been considerably enhanced.

The file status function is improved and the *'Desk'* view shows the record and file size as well as how much room is remaining on the users selected storage device. The potentially disastrous situation of overflowing a disk is avoided through the introduction of a recovery routine. This will either delete user-selected files since file deletion from within a database is now permissible or request a move to another drive unit. Similarly, a database file can be renamed from within a database. The mouse *pointer* have been changed — there are now 3 to indicate the current user action. A further example of the user-friendliness is shown by the automatic addition of the file type suffix for a newly created database.

A further demonstration of the streamlining and resulting increase in user productivity is given by the *repeat* facility during data entry — this allows multiple re-entry of the same data over any number of records. A completely new feature of MiAmiga File is the introduction of a new field type — *calculated amount* fields. These permit arithmetic manipulations using the *+, –, ** and / operators which can also be tested using parenthesis for complex calculations.

I had previously mentioned the creation and *export* of ASCII files, MiAmiga File now can *import* or accept data in ASCII form from external sources. The format of this is *CSV* — comma separated values which most spreadsheets and databases are capable of generating.

One particular feature that appealed to me as a user of an expanded A1000 was the ability to designate the type and amount of memory MiAmiga File could use. In the original version of this product the antisocial attribute of claiming all of avaialble memory could lead to the inability to run other programs. This new version allows the user to select a percentage of available memory (50%, 75% or 100%) and this can be taken from either video display memory or expansion memory. This has particular implications for those users running sound or graphics software at the same time.

Another good feature was the screen dump option — always useful when designing the field structures of a database. This was enhanced by the ability to save and retrieve label and report screen formats and print these out using this screen dump option.

The feedback from users, particularly those from outside the USA has been acted upon and the data, numeric and currency formats have been *internationalised*. This means that users are no longer restricted to the USA date format of month-day-year which could be very confusing when in complete numeric form or tied to the use of the $ symbol for currency values. British users can have the pounds Sterling symbol appear in their files and those users in other countries now have access to the 14 other currency symbols contained within the A000 keyboard.

This is a clear indication that at least one USA software producer is prepared to listen and respond to the wishes of users. Although I have been critical of some USA products in the past, and will continue to be so to those who forget that there is life beyond the eastern confines of the Atlantic Ocean, MiAmiga File no longer belongs to those ranks.

Here is a product that can be described as truly international and coupled with the substantial enhancements has flowered into a strong, sparkling product that amply displays the spirit of the AMIGA. Still the best flat-file database for this machine by a large margin.

B.D.

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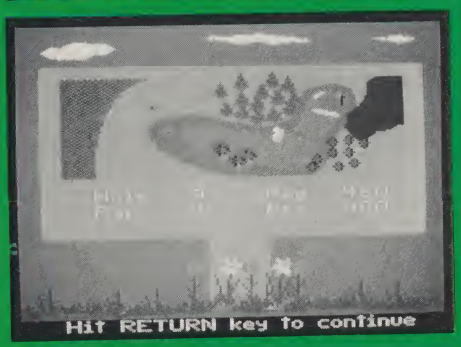
Mean 18 by Accolade

Rumours of a great golf game on the Amiga have been around for some time. The imagination has worked on all the wonders that the Amiga is capable of being set down on the golf course and if you've ever watched these professionals making it look so easy and found when you get out on the course, it was the devil's own invention — as I have — then you just ached for the chance to practice in the privacy of your own home before the usual public humiliation. I know what golf can do to normally civilised people. I once took a terrific girl out to play golf and saw her end by throwing a club a long way into the trees in fury at her inability to hit the ball straight. I didn't mind searching for the club but it was being blamed for it all far bringing her to the course in the first place that got me. I wonder what ever happened to her...

Mean 18... the very sound of the name expresses it. This is a real mean game and, in my view, the best sports simulation on the Amiga or any other 16 bit machine. Accolade who are known for their ability in this field have outdone their usual high standards here.

As is usual in these golf sims, you can play up to four players. You also have four courses St Andrews, Augusta, Pebble Beach and a fictitious course called Bush Hill. There is no copy protection for the good reason that Accolade advises you copy the courses on to another disk which will save you time and trouble. It uses virtually all the 512K so you see the amount of detail Accolade have built into it.

It has a tremendous variety of options that make it virtually inexhaustable in the possibilities you could have to take a untried challenge each time. It has different tees for the varying levels of expertise. The beginner, for example gets perfect aim every time but when you move up the scale it leaves you on your own to work out club and so on. There is nearly always a wind that you have to allow for and that really — and enjoyable — complicates matters. It even has an apparently genuine response to your ball if it hits a tree. It will either ricochet back towards you at a random angle (if you hit a solid brown or black part of the tree) or go through the branches of the tree and be slowed down and come out sideways also along a random angle.



When you reach the green you immediately get an overhead view and with the multiple play option you can vary the order or play — furthest away play first, finishing the putt etc as in real life golf. You can click on your overview of the hold at any time, or if you haven't time to finish a round, save it to disk for future.

As in Ariolasoft's Golf Construction Set, you can junk all the courses — another good reason for copying them first — and then construct your own. You can either change the course in a few aspects, like modifying the trees or bushes or really go to town and make your own course. If you do make a mess of the whole thing, and spoil the disk, do not despair. Accolade will supply you with a back up copy for $10.

Golf, like snooker, has become really big business because of TV. The simplicity of the actions of the game — which of course requires terrific delicacy and talent to play well — is ideally suited to the small screen. Mean 18 is the closest I have seen to the real thing on TV with the tremendous advantage that you are not watching but playing it yourself. I don't see anybody getting tired of Mean 18. There will always be another variation you can make. That's if you can master even the more basic levels. I found Mean 18 was exactly the right mixture of ease of use and the encouragement of letting you get close to being good and that special magnetism that works when its always just a bit harder than you think it is going to be to get down in the par for the hole. So you want to try the next hole and the next to get that much better. The graphics are no 'Defender of the Crown' and what can you do with sound on a 'golf course? But I think Mean 18 is going to be a classic and it must be the one game that every Amiga user will want to play — again and again and again. ZS

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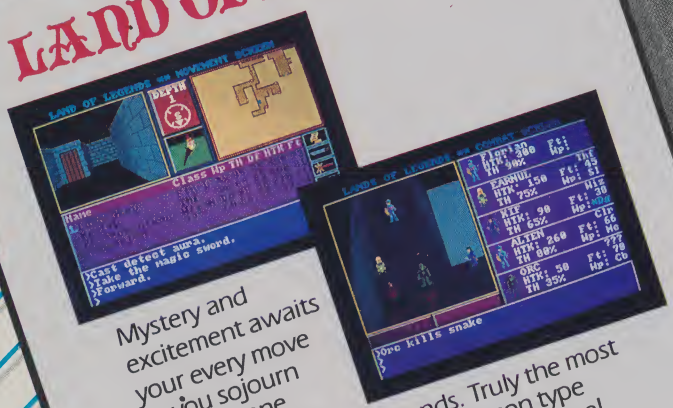

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Inside Info

THE AMIGA — A to Z

As many new readers and AMIGA users start finding the magazine they often come across AMIGA terms they do not understand. We have put together this A-Z of the likely words and expressions they might find useful. We intend — space permitting — to update it sporadically.

depth-arrangement gadget
A gadget in the top right-hand corner of a window which moves the window in front or behind another window.

destination file
The file that is being written to.

device name
A unique name given by AmigaDOS to a hardware device e.g. DF1: is floppy disk drive number 1.

digital-to-analogue convertor
A device that converts a binary quantity to an analogue level.

direct memory access
An arrangement where intelligent devices can read or write to memory without any involvement of the processor.

directory
A collection of files on a disk.

disable
To make something unavailable for use.

display
To produce a graphic object on the monitor screen.

display field
A complete movement of the video beam from the top to the bottom of the monitor screen.

display memory
The area of RAM that contains the data for translation into a screen image.

display mode
One of the basic types of display such as low resolution, high resolution, interlace, non-interlace and dual or sigle playfield.

display time
The amount of time to produce one display field, approximately 1/60th of a second.

DMA
Direct Memory Access.

double-click
To twice quickly press and release a mouse button.

double-menu requestor
A requestor that can be opened by a double-click of the mouse button.

drag
A method of moving a screen image by selecting it and maintaining the pressure on a mouse button whilst moving the mouse the image follows.

drag gadget
The area of a screen or window that is used for selecting and moving the image.

dual playfield mode
A display mode that gives two separately controlled displays simultaneously.

editing commands
Commands that are input from the keyboard and control an editing session.

edit menu
A menu used for text processing containing editing functions.

enable
To make something available for use.

EXEC
Low level primitives that support the AmigaDOS operating system.

extended mode
Commands that appear on the AmigaDOS command line and are not executed until the user has finished with the command line.

extended selection
A method of selecting more than one item from a menu.

file
A collection of related data.

filename
A name given to file for identification.

fill
Putting a colour or pattern into an enclosed area.

flag
The action of detecting a change of state of an object. Usually a binary bit.

font
A design common to a set of letter characters or numbers.

Fortran
FORmula TRANslator. An old, but well established high level language used mainly by the scientific and engineering communities. A huge range of programs has been written in this language. Now available for the AMIGA.

frequency
The number of times per second a waveform repeats.

frequency modulation
A means of changing sound quality by using one audio channel to affect the period of the waveform produced by another channel. Frequency modulation increases or decreases the pitch of the sound.

gadget
An image of a control device within a screen, window or requestor which is used to communicate between the user and the machine.

Genlock
A hardware device that allows the capture or release of video tape frames for graphic reworking in the AMIGA itself.

ghost
An image which is made slightly indistinct by overlaying it with a pattern to indicate it is not enabled or active.

ghost shape
The outline of window that shows briefly when the user is resizing or dragging the window.

Gimmezerozero window
A window with a separate bit-map for the window border.

header file
A file used at the beginning of a C language compilation sequence which includes the definitions and constants, etc.

high resolution
A display mode which has 640 pixels per horizontal line when this line is a full screen width.

CONTINUED ON PAGE 104

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Inside Info

AMIGA A-Z CONTINUED

hit select
A technique of gadget selection where the gadget becomes deselected on release of the mouse button.

hold-and-modify
A display mode which effects an increase in the number of vertical screen display lines allowing the user to display up to 4096 colours.

horizontal blanking interval
The interval after the video beam has finished displaying one line and has not begun displaying another line.

hue
The characteristic of a colour determined by the position of the colour in visible spectrum.

icon
A visual representation of an object in the Workbench.

IDCMP
Intuition Direct Communications Message Port. The main pathway of user communication with Intuition.

immediate mode
AmigaDos commands that execute immediately.

initiallise
To set up an Intuition component with default parameters.

input event
The message created by the input device whenever is detected at one of the AMIGA's input ports.

interlace
A vertical display mode where there are 400 vertical screen lines from the top to the bottom.

IntuitMessage
The input message created by Intuition for applications programs.

Intuition
A visual and interactive meeting point between the user and the machine.

joystick
A controller device that freely rotates and swings from right to left, pivoting from the bottom of the shaft and used to position something on the screen.

keymap
A translation table used by the Console Device to change keycodes into normal ASCII character codes.

keyword
Arguments to AmigaDOS commands that must be stated explicitly.

knob
Part of a proportional gadget which the user sets to a value.

library
A collection of pre-defined routines or functions that can be called and used by any program.

light pen
A controller device consisting of a stylus and used for drawing an image on the screen.

line windows
Parts of a line for AmigaDOS EDIT to execute subsequent commands on.

linked list
A collection of like objects linked by having a pointer variable in one containing the address of the next object, the final object in the chain will carry a null pointer.

LISP
LISt Processing. A symbolic programming language used for expert systems and artificial intelligence research. Now available for the AMIGA.

long word
68000 assembly language syntax for a 32-bit value.

low resolution
A display mode which has 320 pixels per horizontal line when this line is a full screen width.

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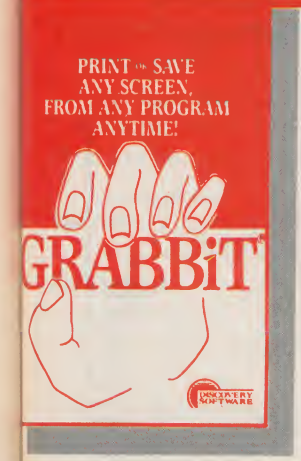

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THE AMIGA DIMENSION

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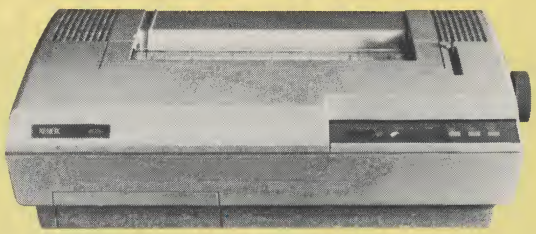

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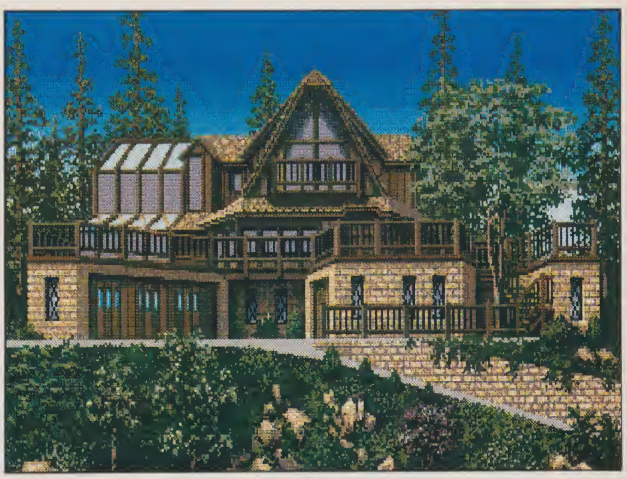

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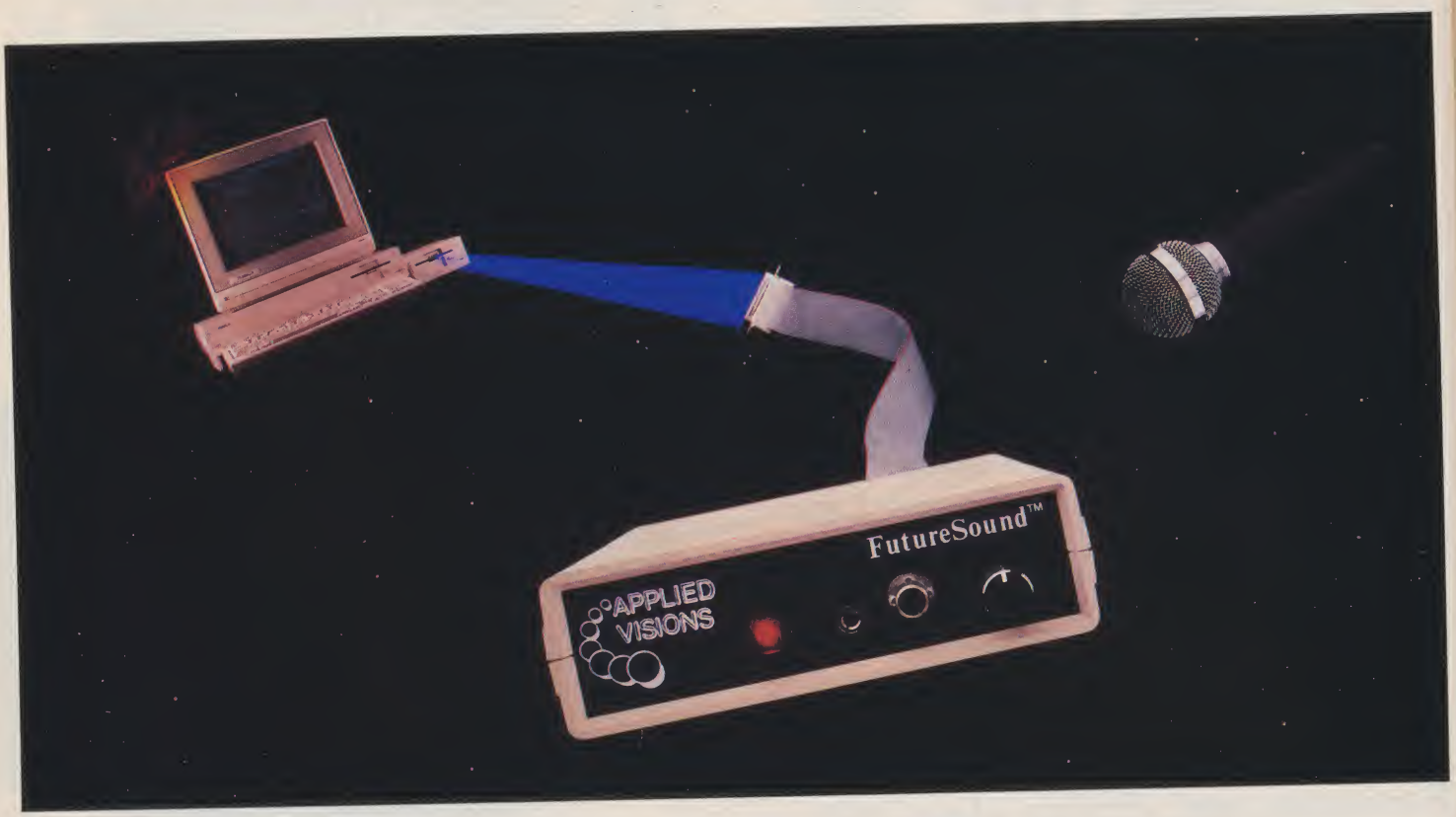

"Open the pod bay doors, HAL..."

Programmers cast their vote!

Right now, leading software developers are hard at work on the next generation of Amiga® products. To add the spectacular sound effects we've all come to expect from Amiga software, they are overwhelmingly choosing one sound recording package... FutureSound. As one developer put it, "FutureSound should be standard equipment for the Amiga."

FutureSound the clear winner...

Why has FutureSound become the clear choice for digital sound sampling on the Amiga? The reason is obvious: a hardware design that has left nothing out. FutureSound includes two input sources, each with its own amplifier, one for a microphone and one for direct recording; input volume control; high speed 8-bit parallel interface, complete with an additional printer port; extra filters that take care of everything from background hiss to interference from the monitor; and of course, a microphone so that you can begin recording immediately.

What about software?

FutureSound transforms your Amiga into a powerful, multi-track recording studio. Of course, this innovative software package provides you with all the basic recording features you expect. But with FutureSound, this is just the beginning. A forty-page manual will guide you through such features as variable sampling rates, visual editing, mixing, special effects generation, and more. A major software publisher is soon to release a simulation with an engine roar that will rattle your teeth. This incredible reverberation effect was designed with FutureSound's software.

APPLIED VISIONS

Question: What can a 300 pound space creature do with these sounds?

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Andy Moss' famed expertise in solving mind stretching adventure games is legendary. He regularly comments in C.C.I. on all the many and increasingly popular aspects of adventure.

Comment

Welcome again to Middle Earth, and another Mind Forever Venturing section packed with all the best there is in Adventure.

First of all I am going to indulge in a spot of name dropping and showing off, as your fearless hero tête a têtted it with a couple of heavyweight legends from the world of adventure this last month. Not only did we make small talk over a few cocktails and canapes but also had lunch together! Impressive stuff eh? But enough of this banter, who were these Names I hear you ask, well they were none other than Infocom's Dave Lebling (he wrote all three Zorks, Enchanter, Starcross and Suspect) sitting on my left. The Anita (The Pawn) Sinclair from Magnetic Scrolls on my right. The occasion was a luncheon at The Limelight club (very trendy, don't you think?) hosted by Activision to announce to the Press their plans for '87.

During our conversation, Dave spoke about the new adventure he is working on and how he had just worked out the solution to a fiendish puzzle he had dreamt up involving a multi-ended chain that would be found in more than one room and needing to be picked up in one go! The mind boggles but all will be revealed in the fullness of time, remember, you heard it here first. Anita and Dave were both being very polite about each others' parsers. Well, why not? And Dave was very interested about a certain software house gaining quite a name at Infocom by the name of Level 9. Guild of Thieves is nearly finished and Anita has promised me a sneak look at it, so as I write this I am waiting for confirmation — hopefully in time for this month's section. So much for the gossip, Dave left saying something about Grues chasing himm and then he was off, which just left Anita to tell us more about The Pawn than we ever thought possible.

What about Activision though, what are their plans for '87? Well, sadly they are to concentrate on more "commercial" product and licensing tie ups, than the Portal/Alter Ego type software, which is a great shame as they were certainly becoming known for innovative programs of the highest quality. Let's hope that they can do a bit of both and keep us all happy.

Infogrames Help Spot

David Crosweller at Infogrames has asked me to pont out to anyone purchasing The Sydney Affair (see review further on) that the instruction in the package have a few mistakes. The listing of objects found, is updated automatically this time, so no typing list is necessary at the start, and watch out when hitting RETURN on the murder scene, as you don't get a second chance to go back to it. It just loads in part 2!

Adventure News

New Release from Microprose

Following their almighty success with Gunship, Microprose tell me that their next BIGGIE, will be a simulation on dodgy seafarers who are quick to plunder the odd ship or two, and go under the name of PIRATES. You will take the part of a Pirate, in a graphical simulation of life on the high seas. Sounds good YO HO.

Adventure News

Gothic Horror from CRL

CRL has announced the release of Frankenstein, following the success of Dracula. It is based on the classic novel, and you play the part of Prof Frankenstein, the mad scientist who creates the Monster. Written by Rod (Dracula) Pike, it wil be a three parter, with animated digitised graphics, horrific sound effects, and some pretty gruesome descriptive text. If you remember, Dracula was the first piece of software to be given a 15 certificate because of the "terrifying" graphics and text, so is this one going to be just as terrible — we wait with bated breath.

Doc the Destroyer

Doc the Destroyer is the first in an advanced race of superheroes, say Melbourne House. His powers of reason and physical strength, and his ability to survive are determined by you at the start of each game.

The world of Doc, is Earth, now however reduced to just raw rock, and mankind is shielded from the poisoned environment, by an energy dome. Our hero is cast out from this protection and branded, a heretic after he warns everyone of impending disaster, and he is left to fight his way back in past the City's defences, surviving the gladitorial arena, to finally confront the temple Priests, who seem to be mixed up in all this.

The adventure also has arcade type combat sequences depicted in massive sprite, which Jane Denning Melbourne's Marketing Manager

All Time Top Ten

Just to add a little spice here's something for you to ponder. My all time top ten adventures. How about you, what are yours?

1) Colossal Cave
2) ZORK 1, 2, 3
3) The Hobbit
4) Dungeon Adventure
5) Adventure Quest
6) The Pawn
7) Snowball
8) Deadline
9) The Knight's Quest
10) Return to Eden

says is a "fantasy role playing text and graphic arcade adventure combat game!". Phew, sound too good to be true, we shall see, won't we?

SSI Launch Blitz

During this month, SSI are set to release a whole stack of strategy games, which should sell and truly temper your lust for battle. They are Broadsides, Gettysburg, Mech Brigade, Carrier Force, Panzer Grenadier, Wargame Construction Set, Baltic 1985, Colonial Conquest, Fighter Command, Computer Ambush and Battlegroup. That should keep all you wargamers busy for a year or two.

Lord Of The Rings Game 2

From the team that brought us Lord Of The Rings, comes new of the sequel, "Shadows Of Mordor" which is based on Tolkien's The Two Towers. Melbourne House promise me that this adventure has certain refinements to the system used in LOR Part 1, including more complex problems, a quicker response time, and an 800 word vocabulary. As the saying goes, let's wait and see.

Electronic Arts and the Ring Quest

There is a huge adventure about to engulf us from America thanks to Electronic Arts, called Ring Quest, which has been written by the Ultima team. It is the story of an enchantress named Lisa who has come under the spell of the Ring of Chaos. You are a ringbearer of The Ring Of Order, and it is your objective to free Lisa and unite the two rings before life as we know it... ends.

It is a roleplaying, interactive, graphic, arcade fantasy adventure game (in that order) with over 100 locations and 80 colour illustrations. Guess who will be having a look at it?

Letters

Dear Andy

I have had my 64 for quite some time now, but never bothered to buy adventures. But a few weeks ago someone gave me a copy of "Mindshadow" by Activision. Now I am addicted and could you please tell me how to finish the bit on the pirate ship. It's driving me mad as I can't seem to do anything. Please help me.
Nick Gentleman
Enfield, Middx.

How could you have been so foolish Nick, to not bother to buy adventures? I think as a punishment I should let you stew on the pirate ship forever, so there. But as you have seen the errors of your ways here is the answer. When you arrive on the ship, go down to the crews quarters and fight the pirate. This will allow you access to the galley, where you will find a meat cleaver, get it, and go up on deck. Look out to sea, and you will see a Navy ship chasing, cut the anchor with the cleaver, stopping the ship and board Navy boat by walking the plank!

Dear Andy,
Please, please, please could you help me. I have got Savage Island Part 1 and boy is it hard. It's practically impossible! Please could you tell me how to get to the atoll, kill the bear and shelter from the hurricane?
From a CCI fan, Steven Clark
East Sussex

Hmmmm Steven, losing your rag over a simple adventure like Savage Island? I'm surprised at you. It's really a piece of cake for a mega hero like me, but for you mere mortals here are a few tips. At the beach dig with hands and get the rum go volcano and drop watch and bottle at the entrance to the cave at the lake. Hold breath, enter lake, get block and knife. The basin in the cave should be filled with the rum, and the empty bottle filled with salty water. The bear can be passed by pouring water onto the cliff and waiting while the bear licks the salt. The hurricane is random, so save the game at regular intervals.

Hello Andy,
I have been playing The Pawn, and achieved 300 points! But now I am stuck, I hope you can help. How can the safe in the tree hut be opened? and how can the door in the ice tower be opened? Looking through CCI I have discovered that you have an Adventure section so now I will buy CCI each month for sure. I hope you can answer my questions and wish you many long frustrating moments with adventures like all game reviewers.
Time Wissink
Holland

Thanks a lot Tim, and the same to you! It's really nice to know that all over the world we adventurers all get stuck in the same places, and if I can help an overseas soul I will, so here goes. First of all, to open the Ice Door and the safe, you need the BLUE key. However, you can only insert it in one door as it disappears after use! I suggest opening the safe as the Ice Door only leads to the Princess. This will give you another 40 points.

Dear Andy,
I hate to point out but in your March 87 issue you have made a mistake. (1) You do not become an Avatar, just by being enlightened in the eight virtues, you only become a partial and will not automatically solve the quest. (2) You do not go through the City of Cove to find the Abyss. (3) The Abyss is on the same island as the Shrine of Humility.

It took me some 4 months to finish Ultima IV and I am now into the Bards Tale.
Yours Falcon Atarglobe
Falgon, Level 9, The Abyss
Ultima IV

Ventura!

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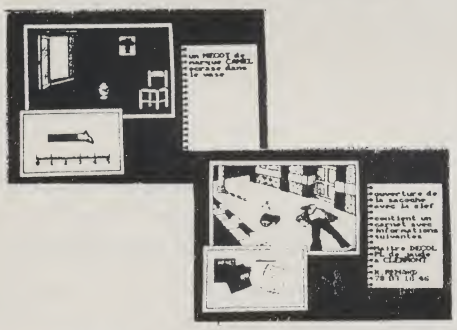
MIND FOREVER VENTURING... CONTINUED

I'm impressed at your prowess, kind sir! However, if you had taken the time to read the section properly, you would have seen that I did say that I was not going to give the whole game away, as that would have spoilt a lot of people's hard work. What I did do was point them in the right direction, and untangle the many complicated stages so lesser mortals than your good self could carry on. I beg your continuing presence each month on progress in your latest exploits, and I'll overlook this little matter. Me, make a mistake? Whatever next?

Reviews

The Sydney Affair — Infogrames £8.95

If you remember, back in the January issue, I reviewed Vera Cruz, the first in Infogrames detective series, and spoke in glowing terms about the game. It really hooked me, and I must say, I felt very much like a real detective, as the clues



came inching their way out of the game bit by bit. I had the murderer's name but couldn't prove it until many hours of play, and even then it was touch and go.

The Sydney Affair is effectively Vera Cruz 2, with you as the now famous French detective given the case of James Sydney, who has been shot dead in the street by a sniper's long range rifle, from an upstairs flat window.

The same scenario then applies, where you move a box cursor around the scene of the crime looking for evidence and the odd clue, and then move to your office computer network system to try by contacting different police services via the computer, to crack the case. There are a few changes to the original, for instance this time there are two places to search for evidence, the street (next to the body) and the flat from which the shots were fired. Once you have got your bits and pieces, you no longer have to type in the various objects as you did in Vera, the computer keeps them in memory, and automatically compares this evidence with the suspects' alibis. And finally using the Network has been made easier from a typing point of view. So much for the good news. The bad news is there is STILL no save game function, an absolute must in a program of this nature; the crime is if anything, easier to solve than Vera Cruz (its apparent right from the start why he was killed) and the instructions leave a lot to be desired (see Infogrames help spot in the news section).

I feel that Sydney Affair has been rushed released in the wake of Vera Cruz success, and that not enough thought has gone into it. It's a shame because I love the idea, and thought Vera Cruz was fabulous. it's just that this one lacks the atmosphere and the tension and its just a bit of a let down.

Personal rating 6

Murder Off Miami — CRL £8.95

This is a 3 part detective story, penned by the infamous Fergus Mcneil and Jason Somerville of Delta 4 fame, and casts you as Detective Officer Kettering assigned to investigate the apparent suicide of wealthy financier Bolitho Blane. It is based on the Dennis Wheatley novel of the same name, and is set around the early 1900's on a cruiser off the coast of Miami. It is a fairly serious venture for the two authors, who have up to now been content to take the mickey out of just about anything that moves. And as such I will look at it in just that, a fairly serious manner.

As a detective adventure. It doesn't work very well, because of the limited vocabulary. As usual they are using Gilsoft's Quill to implement, and this game is pushing the system a bit too far. These days, we are getting used to very sophisticated parsers that let you type in full English sentences and multi-task commands. Murder Off Miami is a game that cries out for a detailed enough parser that lets you interrogate suspects in a free and easy manner, instead of being shackled by software limitations, one drawback of the Quill system. I found myself getting very frustrated trying to hold a conversation with an, in the end sleeping person! You can visit the characters' cabins and explore them whilst they are asleep in their beds, and worst of all just as I was getting down to having a good look

PREVIEW

Stifflip and Co — Palace Software

A very classy adventure is about t be with us, written by Binary Vision, (who did some marvellous work in The Fourth Protocol) and chronicles the efforts of four unlikely spies, who have to track down the evil Count Chameleon, a man who is the sworn enemy of the English Establishment. He has developed the rubbertronic ray, which will neutralise starchy wing collars, and worst of all drastically alter the bounce and line of a cricket ball!

It had a sneak look at the game, at Palace's HQ in London and can report that it is a very clever production. The action revolves around the four strange spies, Viscount Stifflip, Colonel R.G. Bargie, Professor Braindeath and Miss Palmyra Primbottom, who are flown to a country named Banaria to seek out Chameleon and destroy the Ray. All the action is icon controlled, and as you can see from the screen shot, the design and layout is very pretty indeed. You have to move each character around the country, exploring different locations which are graphically represented in a series of black and white 'stills' which scroll upwards as each new area is entered. Objects can be found and used to get past a whle nest of problems, and I must point out that although there is a fight sequence, this is not an arcade adventure, just a purely graphical one which does require a lot of strategy work to overcome the puzzles. You can talk to characters in the game via speech bubblees and there is a fair amount of action as Chameleons henchmen pop up every now and then and have to be dealt with.

I am reliably told by Palace, that there are over 60 locations in the game using two loads, and each location is graphically different. It looks like a cross between Shadowfire and Kwah, but the test is, is it as good? — We shall see . . .

CONTINUED ON PAGE 118

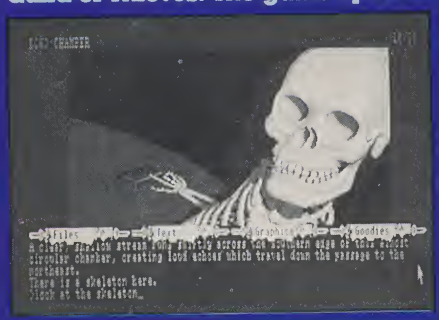
PREVIEW

Is Guild of Thieves a worthy successor to The Pawn? Andy Moss pays a visit to Magnetic Scrolls and plays it first hand to find out the answer and to give you a pre production review.

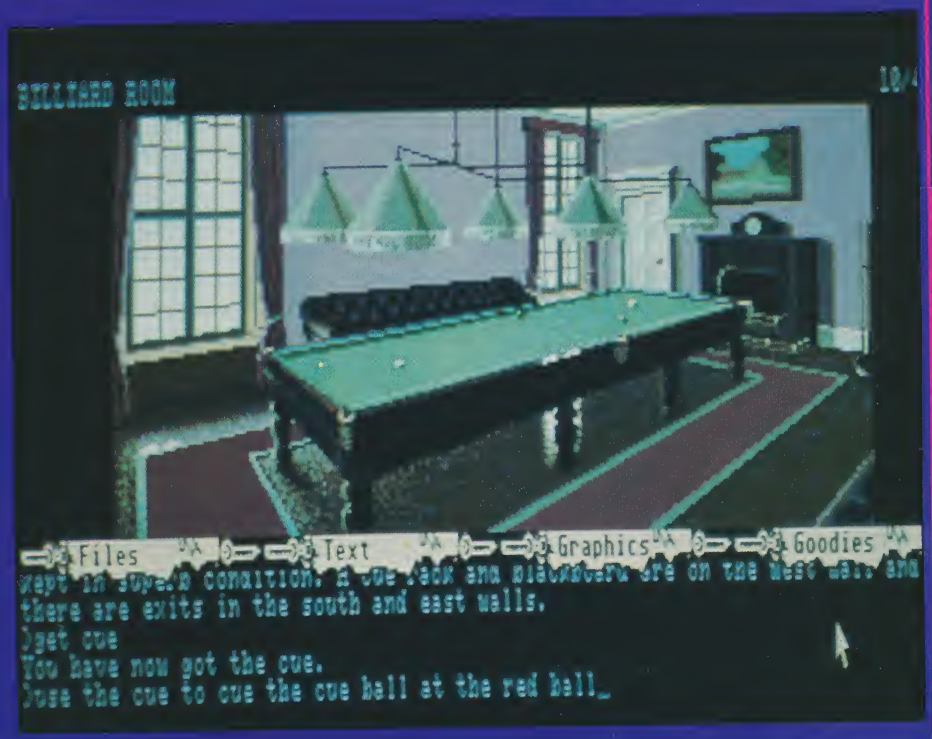
A trip to the offices of Magnetic Scrolls is something of an adventure in itself, with it being tucked away in a tiny corner of early South London, not a stones throw from London Bridge — and me in a car trying to negotiate the small courtyard entrance in which I knew they lived.

I was greeted with some warm "Hellos" from the programming team, given a cup of coffee almost instantly (this I am reliably informed is a ritual, you will never see them without one) and plonked in front of a monitor and keyboard with the words "so you have come to programmers play Thieves have you?" They all sniggered and gave each other "he doesn't know what he is letting himself in for" type looks. Taking no notice of this idle banter your fearless adventurer peered at the screen and prepared to do battle with the vaunted 'Guild of Thieves'.

The adventure is set once again in Kerovnia (the location of The Pawn) and is all about your attempts to become a better thief and be able to join the famous Guild of Thieves. The game opens



with you and The Master Thief in a small boat adjacent to an old jetty. He gives you instructions, which are to ransack a nearby castle of its treasures and return to him in the boat. According to how many treasurer you recover you will be rated as to your worthiness in thievemanship, and, as the Master Thief also knows exactly how many treasures there are to be found you can't cheat you way into their club. You start with just a swag bag to your name and a lot of hope. The pictures in Thieves, and there are around 30, are I would say even better than The Pawn, and I had the opportunity to view three different machines at the same time, (Amiga, 64 and ST) and I can tell you there is not a great deal of difference between them, which is remarkable especially for the 64 version.



The initial locations are some scrubland, a wheatfield, a windmill and a wood, and it is good to get a feel for the game by wandering around these areas for a while. As I was exploring these first few places, Anita Sinclair, Magnetic Scrolls' MD arrived fresh from yet another meeting, took one look at where I was and gave (what was quickly becoming a frequent event) yet another knowing smile. "Have fun" she said, and went off to concentrate on her own keyboard and monitor. Back to the game, and eventually, you'll see the castle, complete with moat, and it's in there that a good deal of the game takes place. There was talk of Thieves being easier than The Pawn. Well, put all notions of that out of your mind, as I can tell you that some of the puzzles are mean to say the least. I would say that it is more user friendly however. There is a nice GO TO command that lets you revisit a location automatically, in fact you can even type "go to sword" if you can't remember where you left it!

The room descriptions are good and meaty, and you have to pay very close attention to a lot of it as there are a few clues hidden in the text that can easily be overlooked. By now I was having a little problem with some cellar rats, and all Anita kept doing was walking over every so often and nodding wisely, as if to say, you are not going to get any help from me!

The humour that ran through The Pawn (remember the Porter in Hell) is very apparent here, and there is a lovely sequence in the Library that involves over 25 different book titles and their contents — watch out for that.

After 4 hours, and uncountable cups of coffee, I called it a day, having found a few treasures visited some fancy places and got myself killed a few times, but richer for the experience. The sniggering from the programmers had stopped as they got down to some serious work debugging and generally putting the finishing touches to the game, Anita was on the phone discussing some finer points of the packaging, it was 11 pm and it seemed the day was just beginning at Magnetic Scrolls. So, with a quick "hope you liked it, see you again soon", and wave from them I was on my way home, safe in the knowledge that another masterpiece was nearing completion. Personally it can't be soon enough. And to think, that there are at least another five adventures planned over the next two years to look forward to . . . oh bliss!

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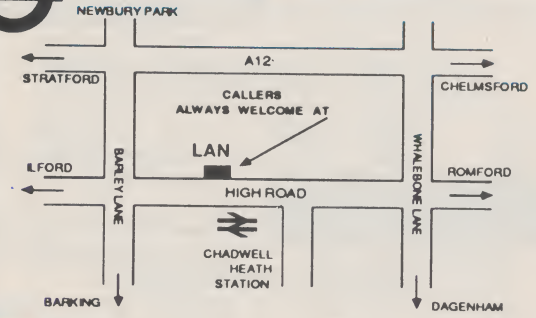

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Inside Info

ICPUG is a highly influential organisation and brings many benefits to its members across the whole range of Commodore activity. CCI considered that a regular column from ICPUG would be of interest to many readers. The views expressed by ICPUG may not be those of CCI

A chance of stardom sometimes strikes quickly. In the ICPUG Column in April's CCI, I was mentioned as Chief Librarian of ICPUG and now, I find myself writing the column.

Friday afternoon, 5 o'clock is drawing near. Sam, my boss, is trying to clear his desk as he's on leave next week. He's clearing it onto mine! The phone rings and my weekend plans go into disarray.

I often get asked what the National Committee of ICPUG actually DO. One answer is we help each other out. John Bickerstaff (Vice Chairman) has rung with a problem — Tim Arnot is on holiday and CCI hasn't got his copy. Most of the rest of the committee are away (the Chairman's on honeymoon). All that is needed is a short article. "Doesn't sound too bad", I say, "When's it needed by?" "First post WHICH Monday!" Great, all I need to do is think of something, write it tonight, get it in the post tomorrow morning and it will be there on time. Pity about all the other jobs though.

On the way home I start thinking of possible topics. Over tea the family add a few more. First prize goes to my brother who suggests "The problems of a wildlife photographer"; April to June is the time I tend to sit up trees (no kidding) to photograph deer, foxes and badgers. Tonight instead I sit at my PET, wordprocessing. Luckily today's post didn't contain any copying requirements, just the minutes of the last Committee meeting, two letters requesting information on the PET library and a plea for help on the 8096 (my own machine). The plea for help will take a bit of time but the other two can be answered by a standard reply sheet. So, now down to business.

As a librarian I get quite a lot of general enquiries. These range from the very general ("Where can I get my 1541 fixed?") to the occasional 6 pages of great detail and problems. The latter are always fun and a great challenge. Indeed it is often one of these problems which prompts me to write that little utility that I've never quite got round to.

One of my specialist topics is disks. Do you know that it takes time but is fully possible to recover the files from a disk which has had its directory (header) track corrupted or which has been reformatted (using the short form of the command). I know because I've done it twice now for members. I did point out to both that it would have been a lot quicker to make backup copies of their disks. During these sessions there is one pair of books which serve as my 'bible'. I do, of course, mean Rae West's excellent pair 'Programming the PET/CBM' and 'Programming the Commodore 64'. If you haven't got a copy, get one — you'll never regret it and if you haven't joined ICPUG, come on in — we're a friendly, helpful bunch (ask my paperboy, Kevin; he's just joined!)

Joe Griffin

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MIND FOREVER VENTURING... CONTINUED

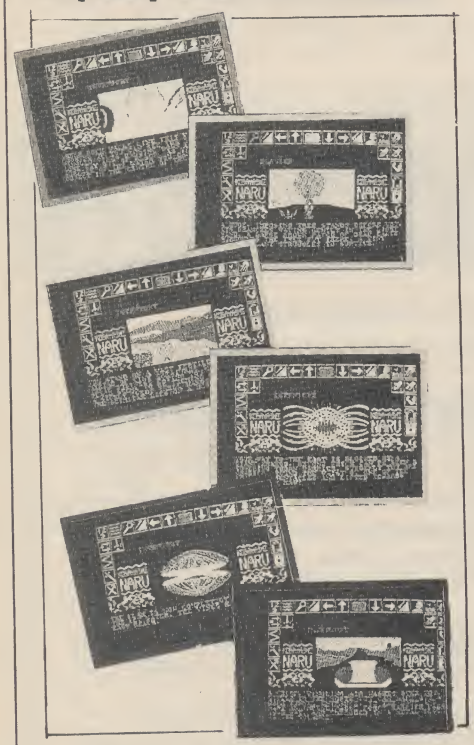
around I was told that the first day had ended, save on tape, and load in day two. What happened next was an I/O error and the chance to only start all over again. No way to retrieve my last position. This is just plain bad manners, and CRL should not release a tape until full error trapping has been carried out.

There are some good points though, like a dossier of the suspects, and a plan of the ship, some witty text, and a good plot. The graphics apart from the loading screen are pretty dire, and pretty worthless apart from the odd clue the memory space should have gone to more words instead.

Personal rating 4

Kobyashi — Mastertronic £1.99

Kobyashi Naru is everything a full price adventure should be but at a fraction of the cost. It is a game completely driven by icon control,



that lets you examine get, drop, use, analyse, throw, etc. without typing a word. On top of that there are some pretty clever puzzles thrown in, in fact I am totally baffled by one as we speak! The storyline is all about your trials to become accepted in the Order of Immortals. You start in a closed chamber on the world of Ygor, and ahead of you are three closed doors. Each door leads to a quest adventure, which must be solved and the required objects brought back to the chamber. It doesn't matter in which order you attempt the doors but you cannot return to the chamber until you have found the quest object of that section. The problem is you don't know what it is! The screen layout has all the icons surrounding the top half of the picture, with the rest of the screen used for location graphics and text. With descriptions like "You stand on a vast fertile plain. A myriad of tiny creatures scurry about their business paying you no heed. The place seems to be teeming with life and a sickly smell hangs in the air." You can see that it is pretty atmospheric.

A wonderful buy by any standards. Go and get it tomorrow!

Personal Rating 9

The Ket Trilogy — Incentive £7.95

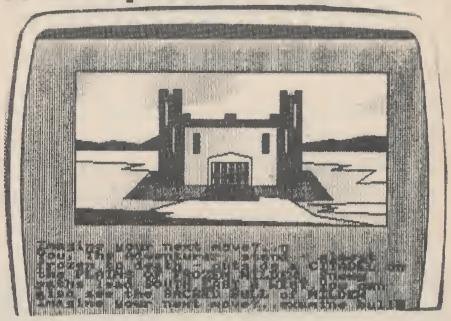
In 1984, when this trilogy first appeared as three separate adventures, there was a prize of a video recorder to the first person to complete the coded message that appeared at the end of each part. I toiled away for weeks, truly, because not only did I want the recorder, but I actually enjoyed the games immensely. Unfortunately, it came to pass that someone beat me to it, I came to grief at the Guardians riddles, so it was not to be. But Incentive have bundled them together on one tape at a very useful price, and even three years on, the adventures play well. The plot concerns you as a convicted murderer (falsely accused) given the chance to go free if you find and destroy the evil King Vran who has devastated the land of Ket. Your task is to travel across the mountains, (Part 1) then underground via the Temple (Part 2) and on to the Final Mission in Vrans inner sanctum. Incentive have added a nice touch to the precedings by inserting a small map routine which uncovers as you explore, giving you a chance to see right away where abouts you are, and doing away with mapping on paper. An adventure that stands the test of time and is great fun to play.

Personal Rating 7

Imagination — Firebird — £1.99

There you were, browsing through your local computer shop, when you notice a dusty disk with no label just lying there. The shopkeeper hasn't got a clue where it came from, and lets you take it home to find out what is on it. So what happens, you get home, power up the Commodore and insert the disc. After a lot of whirring and clanking you are faced with a menu of 4 titles one of which is THE LORDS OF HALF PAST NINE which leaves you in no doubt as to the flavour of this escapade. Selecting the first game makes something strange happen — you actually get pulled into that very adventure!

This is a very witty yarn from the pen of Peter Torrence, who wrote Subsunk and is in fact four adventures in one, linked together by this vision of you sitting at your keyboard trying to work out what this game disk is all about. The drawback is that the parser is a little limited, and refuses to allow you much in the way of helping you if you are a little off course, you know, you know what you want to do but the parser won't let you until



you do something else first. You can get items from one adventure and use them in another, and can come and go quite freely from one to other simply by typing PINCH YOUR ARM!

And the reason for all this excitement? Well the quest is dead simple really, just to find the exact number of stars in the Universe! This done, you can quite happily go back to counting sheep before going to sleep at night.

Personal Rating 8

Next month I have a treat for all you role players out there, as I will be running a role playing special, with an in depth look at four new adventures, RINGS OF ZILFRIN, SHARDS OF SPRING, THE WIZARDS CROWN AND MOEBIUS. All these releases are dedicated D&D games from America soon to be seen over here.

Also if you've any adventures that you have written yourself, send them in to me and I'll tell the rest of the World about them. Farewell from Middle Earth.

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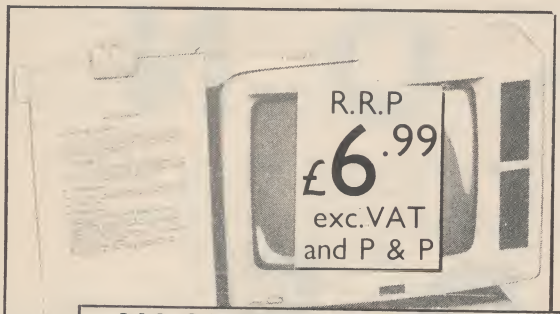

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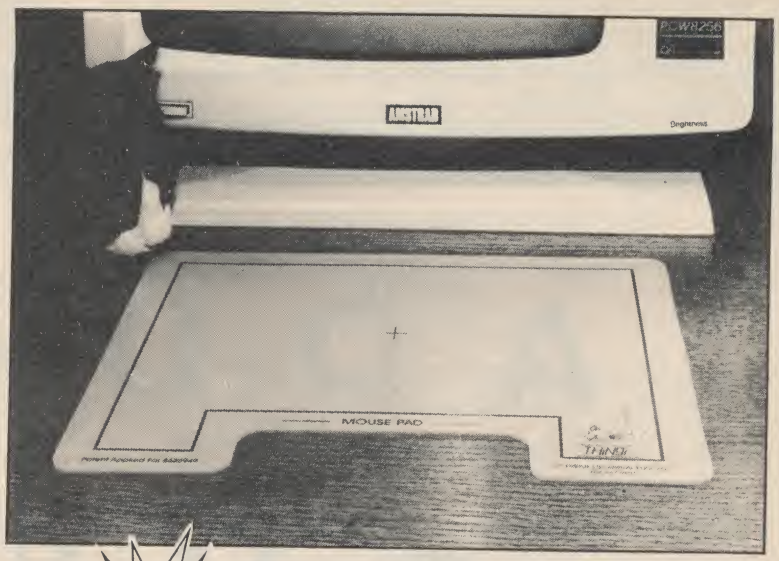

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Music Maker	Starter program. Turns 64 into keyboard.	64,128	£29.95	Music Sales 01-636 7777
Playalong Albums	3 available: Pop, Classics, Beatles. 12 songs. Auto playback or will teach to play melody.	64,128	£9.95	Music Sales
Sound Studio	2 programs in 1. (1) Turns computer into synthesizer. On screen controls. 60 sounds in memory. (2) Sound recording studio (3 channels). Real step time.	64,128	£14.95	Music Sales
Sound Sampler	Hardware & software package with audio lead and mike. Samples and digitizes sound. Editing facilities. Pitch sampler. Drum & echo facilities.	64,128	£69.95	Music Sales
Sound Expander	Hardware & Software package. Gives 64 extra sounds. Turns computer into generator using F.M. technology. Enables 11 voices to be used at one time. Easy play features built in.	64,128	£99.99	Music Sales

CONTINUED ON PAGE 123

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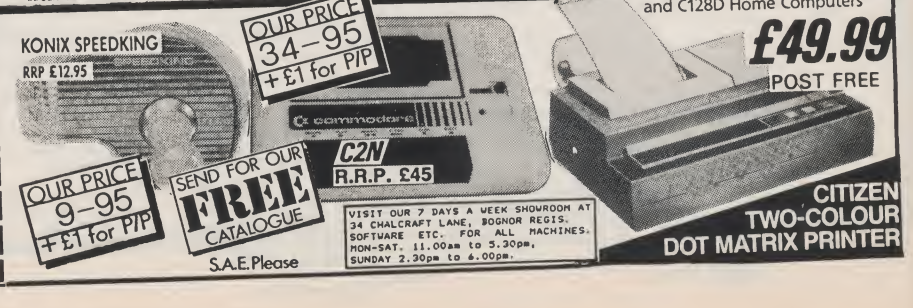

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Accelerator	Ultra compatible, compact size very quiet, 1 year guarantee, 20% faster than 1541C	C64/128	£159.95	Evesham 0386 419989
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Product	Features	Commodore Machine	Price	Company
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Product	Features	Machine	Price	Company
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Turbo Plus	Add Turbo to basic or machine code filers for faster loading. Also scrolls listings up or down	C16, +4 (with cartridge)	£19.95	Anco 0322 92513

CONTINUED ON PAGE 124

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1541 Express	Cartridge — two leads clip inside the computer. Works with most business software.	64	£34.95	Ram 0252 850031
Final Cartridge II	Disk and Tape Turbo — up to 10 Times speed Freeze Frame Keyboard extras Basic 4.0 commands	64/128	£39.00	H&P Computers 0376 511471
Expert Cartridge	Program Paralyser Sprite Extractor Hires Screen, Grabber, Programmable	64/128	£29.99	Trilogic 0274 684289

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Product	Features	Commodore Machine	Price	Company
Delta 3SC	Black, or black with red stripes, 3 fire buttons, light fast action	64, VIC 20 128	£12.00	Voltmace 0462 894410
Vulcan Gunshot I	Cream & beige, 2 fire buttons suction pad underneath	64, VIC 20 128	£7.95	Vulcan 01-203 6366
Vulcan Gunshot II	Black, 2 buttons, autofire, suction pad underneath	64, VIC 20 128	£8.95	Vulcan
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Quickshot 2	Black & red, 2 fire buttons, autofire	64, VIC 20	£9.95	Spectravideo
Quickshot 2 Turbo	Red, 2 fire buttons + auto. Micro switched	64, VIC 20	£14.95	Spectravideo 01-330 0101
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Quickshot II+	Microswitches, large grip, dual stick fire buttons	64/128	£12.99	01-368 1276
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Microswitch	Metal shaft, very durable, large fire button, accurate	64/128	£12.95	

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D150	Portable Printer, 150 characters per sec. For executives — letters memos & charts		£39.00	Norbain 0734 868855
Datel Sampler	Hardware incorporates full 8-bit D to A and ADC conversion. Software includes sample editing	64 + 128	£49.99	Datel 0782 273815
MCS Plus	Combines interface, MIDI link and comprehensive disk software	64 + 128	£225	Joreth Music 0386 831615
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AMS	Editor, keyboard, linker synthesiser and MIDI modules	64/128	£39.95	Rainbird
Comdrum	Digital Drum Software. 20 voices, full sequencing and editing.	64/128	£9.95	Datel

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Trojan Lightpens	Black. Will draw freehand, can magnify or reduce, can fill in with either colour or 2 different patterns	64, VIC 20, +4 C16	£19.95	Trojan 0792 205491

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Stack Light Pen	Unique torch contact switch. Pixel accurate supplied complete with paintbox draw software and 10 pen games. All standard features plus animation and C.A.D. support. Full colour	64, VIC 20	£28.00	Meedmore 051 521 2202

Mice	**Features**	**Machine**	**Price**	**Company**
Datex Mouse	Mouse, tape & disk software	64	£49.95	EEC 01-222 8122
The Magic Mouse	Mouse, tape & disk software	64	£59.95	SMC 01-441 1698
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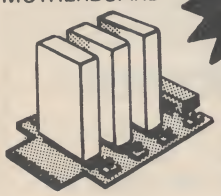

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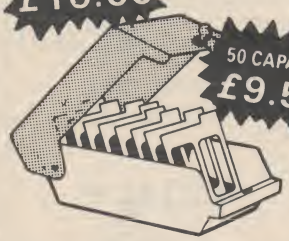

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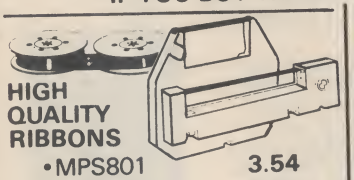

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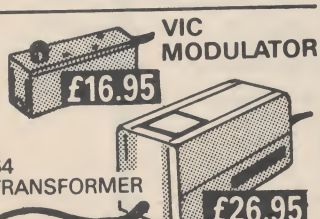

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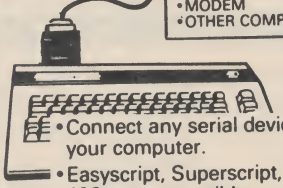

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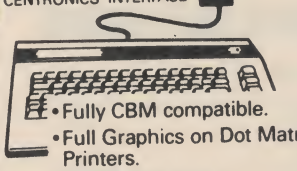

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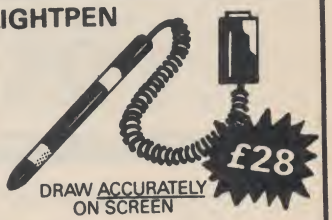

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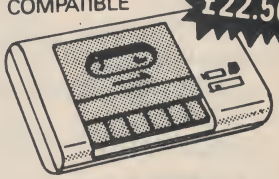

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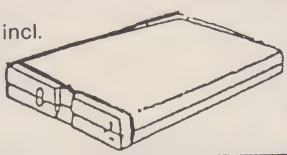

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C. R. Whitaker

A utility, to emulate the 'retrieve last command' that is available on most professional computers.

On a large number of 'Professional' computers, a facility known as a "Last command recall" can be found. This facility enables the user to search for, and view the last command which he has entered. The benefit of this is, that should he forge the command/statement he used to carry out a certain operation, then at the touch of a key, he can lock back at what he had done previously. Obviously there must be a limit to how many commands/statements which can be 'remembered', otherwise you would end up having to search through a list as long as your arm, in which case it would most likely be quicker to have a re-think about the command, and then enter it manually.

The "Last Commands" utility shown here, will remember up to 20 commands/statements (which should be maximum of 37 characters in length). Once the maximum limit has been reached, the next command/statement will be entered at position 1, eraising the first one entered. This 'wrap around' effect will occur each time the maximum limit has been reached. When first run, the default maximum is 20, however this can be changed by entering LIMIT followed by a number between 1 and 20. If you enter a lower limit ie. 10, then all commands/statements following that limit will be erased, ie. 11-20, and the next command entered will appear at position 1. If a higher limit is chosen ie. 15 from 10, then the next command entered will appear at the position following the last command entered, ie. 11.

To search through the list of commands, use F7 to search forwards or F5 to search backwards. Alternatively, you may display a complete list of the commands used by keying F8 (shift/F7), this will give you the COMMAND HISTORY, and the current limit chosen.

Since this utility is 'interrupt driven', it is advisable to de-activate the utility before using either the datacorder or disk drive, since it may interfere with the process of saving or loading. This can be achieved by entering KILL before any tape or disk operation. Having KILLed the utility, you then have the option of either re-activating whilst preserving the previous stored information, ie. carrying on from where you left off, or re-activating and clearing all the previously stored information, in effect starting from scratch. In either case, the last limit chosen will still be in force. To re-activate and preserve the information, enter SYS 49980. To start from scratch, enter SYS 49152.

To speed up or slow down the scanning of remembered commands POKE 50102,X where 1 = very fast and 255 = slow.

```
1 REM ************************************
2 REM *                                  *
3 REM * LAST COMMAND BY CLIVE WHITAKER *
4 REM *                                  *
5 REM ************************************
10 L= 49152
20 FOR X=0 TO  68 :T=0:FOR Y=0 TO 14
30 READ A:IF A <0 OR A >255 THEN 60
40 POKE L,A:L=L+1:T=T+A:NEXT
50 READ A:T=T-(INT(T/256)*256)
60 IF T<>A THEN PRINT"DATA ERROR IN LINE"1000+(X*10)"CHECKSUM <>"A:STOP
70 PRINT 1000+(X*10)"OK":NEXT
80 PRINT"ACTIVATED":SYS 49152:NEW
1000 DATA 120,169,135,162,192,141,004,003,142,005,003,169,106,162,192,  169
1010 DATA 141,008,003,142,009,003,169,071,162,192,141,020,003,142,021,  203
1020 DATA 003,088,169,000,162,197,133,251,134,252,168,169,000,145,251,  074
1030 DATA 200,208,249,230,252,165,252,201,208,208,241,169,000,162,197,  126
1040 DATA 133,251,134,252,134,254,169,003,133,253,096,173,142,002,201,  026
1050 DATA 001,240,013,165,197,201,003,240,016,201,006,240,015,076,049,  127
1060 DATA 234,165,197,201,003,208,247,076,141,193,076,011,193,076,072,  045
1070 DATA 193,032,115,000,240,012,201,076,240,011,201,075,240,010,201,  055
1080 DATA 075,240,009,076,231,167,076,232,193,076,000,195,076,000,195,  049
1090 DATA 160,000,185,000,002,201,048,144,007,201,058,176,003,076,124,  105
1100 DATA 165,173,000,207,201,020,240,093,238,000,207,032,155,195,165,  043
1110 DATA 020,145,251,200,165,021,201,000,240,005,145,251,076,184,192,  048
1120 DATA 169,032,145,251,200,169,032,145,251,200,185,253,001,201,000,  186
1130 DATA 240,006,145,251,192,037,208,242,169,032,192,037,240,006,145,  094
1140 DATA 251,200,076,203,192,169,141,145,251,200,169,145,145,251,173,  151
1150 DATA 007,207,205,155,192,240,013,238,007,207,165,251,166,252,141,  142
1160 DATA 008,207,142,009,207,032,099,195,076,124,165,169,000,162,197,  000
1170 DATA 133,251,134,252,169,000,141,000,207,076,158,192,173,007,207,  052
1180 DATA 201,000,240,035,032,192,195,173,001,207,205,007,207,240,027,  170
1190 DATA 160,000,177,253,200,032,210,255,192,037,208,246,238,001,207,  112
1200 DATA 032,127,195,032,181,195,032,205,195,076,049,234,169,000,141,  071
1210 DATA 001,207,169,003,133,253,169,197,133,254,076,029,193,173,007,  205
```

Program

LAST COMMANDS ...CONTINUED

```
1220 DATA 207,201,000,240,034,032,192,195,032,141,195,173,001,207,201,  003
1230 DATA 000,240,024,160,000,177,253,200,032,210,255,192,037,208,246,  186
1240 DATA 206,001,207,032,181,195,032,205,195,076,049,234,173,007,207,  208
1250 DATA 141,001,207,173,008,207,133,253,230,253,230,253,230,253,173,  185
1260 DATA 009,207,133,254,076,092,193,032,192,195,165,251,166,252,141,  054
1270 DATA 002,207,142,003,207,169,219,160,195,032,030,171,160,000,132,  037
1280 DATA 251,169,197,133,252,177,251,201,000,240,028,169,032,032,210,  038
1290 DATA 255,169,032,032,210,255,177,251,200,032,210,255,192,038,208,  212
1300 DATA 246,032,099,195,160,000,076,169,193,169,243,160,195,032,030,  207
1310 DATA 171,173,002,207,174,003,207,133,251,134,252,032,181,195,032,  099
1320 DATA 205,195,076,049,234,076,231,167,032,115,000,201,073,208,246,  060
1330 DATA 032,115,000,201,077,208,239,032,115,000,201,073,208,232,032,  229
1340 DATA 115,000,201,084,208,225,032,115,000,201,032,240,249,234,234,  122
1350 DATA 234,201,049,144,211,201,058,176,207,141,004,207,141,013,196,  135
1360 DATA 032,115,000,201,000,240,017,201,048,144,190,201,058,176,186,  017
1370 DATA 141,014,196,141,005,207,076,060,194,141,005,207,169,032,141,  193
1380 DATA 014,196,169,207,133,035,169,004,133,034,169,002,032,181,183,  125
1390 DATA 032,247,183,165,021,201,000,208,003,076,088,194,076,247,194,  143
1400 DATA 165,020,201,021,176,247,173,013,196,141,007,196,173,014,196,  147
1410 DATA 141,008,196,165,020,141,155,192,205,007,207,176,086,173,007,  087
1420 DATA 207,141,006,207,165,020,141,007,207,173,006,207,056,237,007,  251
1430 DATA 207,170,173,008,207,133,251,173,009,207,133,252,032,099,195,  201
1440 DATA 234,032,113,195,202,208,250,165,251,166,252,160,000,133,253,  054
1450 DATA 134,254,169,000,145,253,200,208,249,230,254,165,254,201,202,  102
1460 DATA 208,241,173,007,207,141,000,207,032,113,195,165,251,166,252,  054
1470 DATA 141,008,207,142,009,207,076,221,194,173,007,207,141,000,207,  148
1480 DATA 173,008,207,174,009,207,133,251,134,252,032,099,195,169,003,  254
1490 DATA 162,197,133,253,134,254,169,000,141,001,207,173,005,207,201,  189
1500 DATA 000,240,003,076,228,167,076,231,167,032,072,178,076,234,194,  182
1510 DATA 076,231,167,032,115,000,201,073,208,246,032,115,000,201,076,  237
1520 DATA 208,239,032,115,000,201,076,240,003,076,231,167,120,169,124,  209
1530 DATA 162,165,141,004,003,142,005,003,169,228,162,167,141,008,003,  223
1540 DATA 142,009,003,169,049,162,234,141,020,003,142,021,003,088,076,  238
1550 DATA 228,167,234,234,234,234,234,234,234,120,169,135,162,192,141,  136
1560 DATA 004,003,142,005,003,169,106,162,192,141,008,003,142,009,003,  068
1570 DATA 169,071,162,192,141,020,003,142,021,003,088,096,165,251,024,  012
1580 DATA 105,040,133,251,165,252,105,000,133,252,096,165,251,056,233,  189
1590 DATA 040,133,251,165,252,233,000,133,252,096,165,253,024,105,040,  094
1600 DATA 133,253,165,254,105,000,133,254,096,165,253,056,233,040,133,  225
1610 DATA 253,165,254,233,000,133,254,096,172,000,207,169,000,032,145,  065
1620 DATA 179,032,221,189,173,001,001,133,020,173,002,001,133,021,160,  159
1630 DATA 000,096,234,234,160,255,162,255,202,208,253,136,208,248,096,  187
1640 DATA 120,169,049,162,234,141,020,003,142,021,003,088,096,120,169,  001
1650 DATA 071,162,192,141,020,003,142,021,003,088,096,000,141,032,032,  120
1660 DATA 018,032,067,079,077,077,065,078,068,032,072,073,083,084,079,  216
1670 DATA 082,089,032,141,017,000,141,032,032,076,073,077,073,084,032,  213
1680 DATA 083,069,084,032,084,079,046,046,046,018,032,050,048,032,141,  122
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Program

GIANT

I am sure that there must be many programmers who, like me, have been drawn to their keyboards to crack a particular problem, and having done so, never get around to arranging the program into a form that may be used by others, nor, moreover, by themselves when they come back to it some months later.

The situation usually arises because the tedium of titling, and setting out instructions, soon comes second best to the next project forming in our minds.

It was whilst pondering the question of titles that I remembered a program I had copied from a magazine for my ZX81. The program interrogated the computer's character ROM to check how the pattern of 64 pixels, on an 8 x 8 matrix, which form each screen character, is made up. It then produced a similar pattern made up this time, not of tiny pixels, but of blocks, reversed spaces in fact, so as to form characters with areas 64 times that of the standard. On the C-64, I figured, its 25 x 40 character screen could produce 3 rows of 5 giant characters. It offered an easy way to make titles but there were a few minor snags to sort out in order to make it more versatile, and one major one; the Basic program took about 30 seconds to produce a screen full of the giant characters. The obvious answer was to produce the same effect by a machine-code routine and the program described here, called "GIANT", is the result.

Giant is loaded by means of a Basic loader into the area 50000 to 50411 and is called the SY5 50000. It may, however, be moved to wheresoever you wish, by changing line 10 of the loader accordingly.

The syntax for GIANT is as follows:

SYS 50000 "A", B, C, D where:—

"A" is a string up to 5 characters long and represents the giant characters which are to be printed, GIANT will automatically centre the characters, but as spaces are counted, these may be used to force any offset needed. Spaces are actually printed and so will effectively erase any characters already on the screen. If you do not wish to erase, you must use the control character for cursor right, which is represented on the screen by a reversed, square, closed bracket, which is called a "skip" character for the purposes of this program.

B must be a number from 1 to 3, and is used to indicate on which of the possible 3 rows you wish to print.

C specifies the minor character from which the giant ones are built. If C is not specified, the default is a reversed space, which appears as a wholly filled block. A figure 1 used in position B tells the computer to make the minor character the same as that being printed in giant form; thus if the word GO were being printed the giant G and O would be built from little Gs and Os respectively. Placing a valid character code in position C will make the minor characters print as per that code.

D is a multi-function parameter which primarily defines the colour by use of the standard codes 0 to 15. If unspecified the default is 0 (black). Adding the number 32 to the value of D will cause the giant character to be a lower case version of that specified by "A". Adding 64 will cause the minor character to appear in reverse, whilst adding 128 will do the same for the giant character.

GIANT also contains a short program to allow the use, from Basic, of the C-64's in-built PLOT routine. This allows the placement of the cursor at any print position on the screen without the need for rows of "cursor down" characters and at the same time makes the TAB command unnecessary.

Call PLOT with:

SYS T + 396,C,R where

T is the start address for "Giant" and equals 50000 as the program is written here.

C and R are the column and row, respectively, that the cursor is to move to.

Do remember that the columns run from 0 to 39 and the rows from 0 to 24, as in order to keep the program as short as possible, no safety nets are incorporated. Illegal numbers may cause some strange effects.

The programme TEST provides some illustrations of the use of GIANT the symbol for dark blue.

Besides being used as a titling utility, GIANT may also be used for other purposes such as advertising or as an aid to producing graphics for games, (a giant asterix looks remarkably like a space invader)! No doubt readers will find other uses too.

```
1 REM ************************************
2 REM *                                  *
3 REM *       GIANT BY RICK ASTLEY       *
4 REM *                                  *
5 REM ************************************
10 L=50000
20 FOR X=0 TO 27:T=0:FOR Y=0 TO 14
30 READ A:IF A <0 OR A >255 THEN 60
40 POKE L,A:L=L+1:T=T+A:NEXT
50 READ A:T=T-(INT(T/256)*256)
60 IF T<>A THEN PRINT"DATA ERROR IN LINE"1000+(X*10)"CHECKSUM <>"A:STOP
70 PRINT1000+(X*10)"OK":NEXT
1000 DATA 173,024,208,041,014,010,010,141,168,002,201,016,208,005,169,  110
1010 DATA 208,141,168,002,032,212,225,162,000,134,184,142,173,002,134,  127
1020 DATA 199,032,121,000,240,008,032,241,183,134,184,142,001,199,165,  089
1030 DATA 186,240,004,201,004,144,003,076,008,175,164,183,240,249,192,  021
1040 DATA 006,144,005,162,023,108,000,003,173,134,002,072,165,184,141,  042
1050 DATA 134,002,162,001,042,144,003,142,173,002,042,144,002,134,199,  046
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Program

```
1060 DATA 165,185,141,176,002,208,011,169,001,133,199,169,032,133,185, 117
1070 DATA 141,176,002,169,020,166,183,056,233,004,202,208,250,141,174, 077
1080 DATA 002,169,248,166,186,024,105,008,202,208,250,141,175,002,160, 254
1090 DATA 000,132,252,165,184,041,032,074,074,074,074,074,133,254,177, 204
1100 DATA 187,141,167,002,201,255,208,004,169,094,208,052,042,144,020, 102
1110 DATA 042,144,006,177,187,041,127,208,040,042,144,031,177,187,009, 026
1120 DATA 064,041,127,208,029,042,144,015,042,176,006,177,187,041,191, 210
1130 DATA 144,017,177,187,041,223,208,011,042,177,187,176,006,169,029, 002
1140 DATA 145,187,208,051,133,253,174,173,002,240,002,009,128,133,253, 043
1150 DATA 208,002,208,165,165,253,024,006,253,038,254,006,253,038,254, 079
1160 DATA 006,253,038,254,165,253,024,165,254,109,168,002,133,254,208, 238
1170 DATA 035,056,173,175,002,233,007,141,175,002,024,173,174,002,105, 197
1180 DATA 008,141,174,002,230,252,164,252,196,183,208,201,160,000,132, 255
1190 DATA 199,104,141,134,002,096,165,185,201,032,144,008,201,160,176, 156
1200 DATA 010,201,128,144,006,173,167,002,141,176,002,132,252,172,174, 088
1210 DATA 002,174,175,002,024,032,240,255,160,000,162,008,165,199,133, 195
1220 DATA 251,120,165,001,041,251,133,001,177,253,042,072,165,001,009, 146
1230 DATA 004,133,001,088,176,008,169,000,133,199,169,032,208,003,173, 216
1240 DATA 176,002,032,210,255,165,251,133,199,104,202,208,223,200,192, 248
1250 DATA 008,240,134,238,175,002,132,251,172,174,002,174,175,002,032, 119
1260 DATA 240,255,164,251,208,185,032,241,183,138,072,032,241,183,104, 225
1270 DATA 168,024,032,240,255,096,000,000,000,000,000,000,000,000,000, 047
```

```
1 REM ***********************************
2 REM *                                 *
3 REM *   GIANT DEMO BY RICK ASTLEY     *
4 REM *                                 *
5 REM ***********************************
10 PRINT "■":POKE 53280,12:POKE 53281,12:T=50000:C=T+396
20 SYS T"I"
30 A$=CHR$(115)+"    ":SYS 50000 A$,2,1,2
40 SYS T"■■■MY",2,183,35
50 SYS T"CCI",3,96,198
60 SYS C,8,15:PRINT "■──────────────────────────────"
70 SYS C,8,24:PRINT "■──────EACH MONTH──────";
80 GOTO80
```


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Program

FXED

FXED

FXED

John Stevenson

"FXED" is a sound effects editor for the CBM 64. FXED allows you to edit two hundred and fifty six different sound effects. Then when you have created the effects you want you can save out the data for them complete with IRQ and driver routines. The file saved out can then be loaded independent of the main program and utilised in basic programs, eg. games etc.

To use FXED first create the effects desired. then hitting the F7 key, FXED will save them to either tape or disk. When it is finished saving, reset the computer and load the effects saved.

It is then ready for use in basic programs. The first line of the program must have "SYS 50651", this initialises the IRQ. Then to play an effect just type:

POKE 50156,effects number : SYS 50933.

You can play a maximum of three effects at any one time.

Instructions for the editor are on screen.

John Stevenson wrote this program for the effects in his current project. And when it was finished he came up with the idea to turn into a basic utility. You may have seen his last two projects, "PUB GAMES" & "ARK PANDORA". Both got very good reviews in CCI.

```
1 REM ************************************
2 REM *                                  *
3 REM *     FXED BY JOHN STEVENSON       *
4 REM *                                  *
5 REM ************************************
10 POKE 679,169:POKE 680,54
20 POKE 681,133:POKE 682,1
30 POKE 683,76 :POKE 684,0
40 POKE 685,188:POKE 650,128
50 L=48128
60 FOR X=0 TO 197:T=0:FOR Y=0 TO 14
70 READ A:IF A <0 OR A >255 THEN 100
80 POKE L,A:L=L+1:T=T+A:NEXT
90 READ A:T=T-(INT(T/256)*256)
100 IF T<>A THEN PRINT"DATA ERROR IN LINE"1000+(X*10)"CHECKSUM <>"A:STOP
110 PRINT1000+(X*10)"OK":NEXT
120 SYS 679
1000 DATA 169,000,141,032,208,141,033,208,032,168,194,032,243,194,169, 172
1010 DATA 005,141,134,002,032,010,189,032,168,190,032,110,196,032,159, 152
1020 DATA 255,032,228,255,201,081,208,006,032,018,191,076,022,188,201, 202
1030 DATA 065,208,006,032,236,192,076,022,188,201,087,208,006,032,070, 093
1040 DATA 069,208,006,032,122,191,076,022,188,201,083,208,006,032,032, 183
1050 DATA 193,076,022,188,201,068,208,006,032,084,233
1060 DATA 070,208,006,032,174,191,076,022,188,201,082,208,006,032,136, 068
1070 DATA 193,076,022,188,201,084,208,006,032,226,191,076,022,188,201, 152
1080 DATA 071,208,006,032,188,193,076,022,188,201,089,208,006,032,022, 192
1090 DATA 076,022,188,201,072,208,006,032,240,193,076,022,188,201,085, 058
1100 DATA 208,006,032,074,192,076,022,188,201,074,208,006,032,036,194, 228
1110 DATA 076,022,188,201,073,208,006,032,126,202
```

Program

```
1120 DATA 192,076,022,188,201,075,208,006,032,088,194,076,022,188,201,  233
1130 DATA 032,208,006,032,229,192,076,022,188,201,133,208,006,032,192,  221
1140 DATA 196,076,022,188,201,134,208,006,032,149,196,076,022,188,201,  103
1150 DATA 135,208,015,032,014,197,032,251,196,032,117,195,032,110,196,  226
1160 DATA 076,000,188,201,136,208,009,032,235,196,032,021,197,076,000,  071
1170 DATA 188,201,088,208,003,032,168,197,076,022,188,162,000,189,139,  069
1180 DATA 189,240,007,032,210,255,232,076,012,189,162,000,189,129,190,  064
1190 DATA 240,007,032,210,255,232,076,026,189,162,024,160,000,024,032,  133
1200 DATA 240,255,162,000,189,103,189,240,007,032,210,255,232,076,048,  190
1210 DATA 189,162,022,160,010,024,032,240,255,162,000,189,083,189,240,  165
1220 DATA 007,032,210,255,232,076,070,189,096,158,032,040,088,041,032,  022
1230 DATA 068,069,086,073,067,069,032,078,079,032,032,005,056,000,005,  239
1240 DATA 032,032,032,032,032,032,032,040,070,053,041,032,076,079,065,  168
1250 DATA 068,032,070,088,032,032,040,070,055,041,032,083,065,086,069,  095
1260 DATA 032,070,088,000,096,147,032,032,032,032,032,032,032,040,081,  010
1270 DATA 044,065,041,032,078,079,084,069,032,072,073,032,032,032,013,  010
1280 DATA 013,032,032,032,032,032,032,032,040,087,044,083,041,032,078,  130
1290 DATA 079,084,069,032,076,079,032,032,032,013,013,032,032,032,032,  157
1300 DATA 032,032,032,040,069,044,068,041,032,087,065,086,069,070,079,  078
1310 DATA 082,077,032,032,013,013,032,032,032,032,032,032,032,040,082,  083
1320 DATA 044,070,041,032,080,085,076,083,069,032,072,073,032,032,013,  066
1330 DATA 013,032,032,032,032,032,032,032,040,084,044,071,041,032,080,  117
1340 DATA 085,076,083,069,032,076,079,032,032,013,013,032,032,032,032,  206
1350 DATA 032,032,032,040,089,044,072,041,032,065,084,084,065,067,075,  086
1360 DATA 047,068,069,067,065,089,032,032,013,013,032,032,032,032,032,  143
1370 DATA 032,032,040,085,044,074,041,032,083,085,083,084,065,073,078,  163
1380 DATA 032,082,069,076,069,065,083,069,032,013,013,032,032,032,032,  219
1390 DATA 032,032,032,040,073,044,075,041,032,070,088,032,068,069,076,  036
1400 DATA 065,089,013,013,158,013,013,032,032,032,032,032,032,032,080,  156
1410 DATA 082,069,083,083,032,083,080,065,067,069,032,084,079,032,080,  252
1420 DATA 076,065,089,032,069,070,070,069,067,084,000,159,013,013,032,  140
1430 DATA 032,032,032,032,032,032,040,070,049,044,070,051,041,032,070,  147
1440 DATA 088,032,078,085,077,066,069,082,032,032,068,079,087,078,047,  232
1450 DATA 085,080,013,001,000,162,000,189,183,190,240,007,032,210,255,  111
1460 DATA 232,076,170,190,096,019,005,029,029,029,029,029,029,029,029,  252
1470 DATA 029,029,029,029,029,029,029,029,029,029,029,029,029,029,029,  179
1480 DATA 029,029,029,029,029,029,048,048,048,157,157,157,017,017,048,  103
1490 DATA 048,048,157,157,157,017,017,048,048,048,157,157,157,017,017,  226
1500 DATA 048,048,048,157,157,157,017,017,048,048,048,157,157,157,017,  001
1510 DATA 017,048,048,048,157,157,157,017,017,048,048,048,157,157,157,  001
1520 DATA 017,017,048,048,048,000,173,218,192,141,225,192,173,214,190,  104
1530 DATA 141,226,192,173,215,190,141,227,192,173,216,190,141,228,192,  021
1540 DATA 032,178,192,173,225,192,141,218,192,173,226,192,141,214,190,  119
1550 DATA 173,227,192,141,215,190,173,228,192,141,216,190,096,173,217,  204
1560 DATA 192,141,225,192,173,222,190,141,226,192,173,223,190,141,227,  032
1570 DATA 192,173,224,190,141,228,192,032,178,192,173,225,192,141,217,  130
1580 DATA 192,173,226,192,141,222,190,173,227,192,141,223,190,173,228,  067
1590 DATA 192,141,224,190,096,173,221,192,141,225,192,173,230,190,141,  161
1600 DATA 226,192,173,231,190,141,227,192,173,232,190,141,228,192,032,  200
1610 DATA 178,192,173,225,192,141,221,192,173,226,192,141,230,190,173,  023
1620 DATA 227,192,141,231,190,173,228,192,141,232,190,096,173,220,192,  002
1630 DATA 141,225,192,173,238,190,141,226,192,173,239,190,141,227,192,  064
1640 DATA 173,240,190,141,228,192,032,178,192,173,225,192,141,220,192,  149
1650 DATA 173,226,192,141,238,190,173,227,192,141,239,190,173,228,192,  099
1660 DATA 141,240,190,096,173,219,192,141,225,192,173,246,190,141,226,  225
1670 DATA 192,173,247,190,141,227,192,173,248,190,141,228,192,032,178,  184
1680 DATA 192,173,225,192,141,219,192,173,226,192,141,246,190,173,227,  086
1690 DATA 192,141,247,190,173,228,192,141,248,190,096,173,222,192,141,  206
1700 DATA 225,192,173,254,190,141,226,192,173,255,190,141,227,192,173,  128
1710 DATA 000,191,141,228,192,032,178,192,173,225,192,141,222,192,173,  168
1720 DATA 226,192,141,254,190,173,227,192,141,255,190,173,228,192,141,  099
1730 DATA 000,191,096,173,223,192,141,225,192,173,006,191,141,226,192,  058
```

Program

```
1740 DATA 173,007,191,141,227,192,173,008,191,141,228,192,032,178,192, 218
1750 DATA 173,225,192,141,223,192,173,226,192,141,006,191,173,227,192, 107
1760 DATA 141,007,191,173,228,192,141,008,191,096,173,224,192,141,225, 019
1770 DATA 192,173,014,191,141,226,192,173,015,191,141,227,192,173,016, 209
1780 DATA 191,141,228,192,032,178,192,173,225,192,141,224,192,173,226, 140
1790 DATA 192,141,014,191,173,227,192,141,015,191,173,228,192,141,016, 179
1800 DATA 191,096,238,225,192,173,225,192,208,012,169,048,141,226,192, 224
1810 DATA 141,227,192,141,228,192,096,032,055,195,096,096,160,000,200, 003
1820 DATA 192,140,208,251,096,232,224,002,208,243,096,000,000,000,000, 100
1830 DATA 000,000,000,000,000,048,048,048,173,224,192,141,001,195,096, 142
1840 DATA 173,218,192,141,225,192,173,214,190,141,226,192,173,215,190, 039
1850 DATA 141,227,192,173,216,190,141,228,192,032,140,194,173,225,192, 096
1860 DATA 141,218,192,173,226,192,141,214,190,173,227,192,141,215,190, 009
1870 DATA 173,228,192,141,216,190,096,173,217,192,141,225,192,173,222, 211
1880 DATA 190,141,226,192,173,223,190,141,227,192,173,224,190,141,228, 035
1890 DATA 192,032,140,194,173,225,192,141,217,192,173,226,192,141,222, 092
1900 DATA 190,173,227,192,141,223,190,173,228,192,141,224,190,096,173, 193
1910 DATA 221,192,141,225,192,173,230,190,141,226,192,173,231,190,141, 042
1920 DATA 227,192,173,232,190,141,228,192,032,140,194,173,225,192,141, 112
1930 DATA 221,192,173,226,192,141,230,190,173,227,192,141,231,190,173, 076
1940 DATA 228,192,141,232,190,096,173,220,192,141,225,192,173,238,190, 007
1950 DATA 141,226,192,173,239,190,141,227,192,173,240,190,141,228,192, 069
1960 DATA 032,140,194,173,225,192,141,220,192,173,226,192,141,238,190, 109
1970 DATA 173,227,192,141,239,190,173,228,192,141,240,190,096,173,219, 254
1980 DATA 192,141,225,192,173,246,190,141,226,192,173,247,190,141,227, 080
1990 DATA 192,173,248,190,141,228,192,032,140,194,173,225,192,141,219, 120
2000 DATA 192,173,226,192,141,246,190,173,227,192,141,247,190,173,228, 115
2010 DATA 192,141,248,190,096,173,222,192,141,225,192,173,254,190,141, 210
2020 DATA 226,192,173,255,190,141,227,192,173,000,191,141,228,192,032, 249
2030 DATA 140,194,173,225,192,141,222,192,173,226,192,141,254,190,173, 012
2040 DATA 227,192,141,255,190,173,228,192,141,000,191,096,173,223,192, 054
2050 DATA 141,225,192,173,006,191,141,226,192,173,007,191,141,227,192, 114
2060 DATA 173,008,191,141,228,192,032,140,194,173,225,192,141,223,192, 141
2070 DATA 173,226,192,141,006,191,173,227,192,141,007,191,173,228,192, 149
2080 DATA 141,008,191,096,173,224,192,141,225,192,173,014,191,141,226, 024
2090 DATA 192,173,015,191,141,227,192,173,016,191,141,228,192,032,140, 196
2100 DATA 194,173,225,192,141,224,192,173,226,192,141,014,191,173,227, 118
2110 DATA 192,141,015,191,173,228,192,141,016,191,096,206,225,192,173, 068
2120 DATA 225,192,201,255,208,014,169,050,141,226,192,169,053,141,227, 159
2130 DATA 192,141,228,192,096,032,055,195,096,120,169,001,141,026,208, 100
2140 DATA 173,017,208,041,127,141,017,208,169,000,141,013,220,141,014, 094
2150 DATA 220,169,202,141,020,003,169,194,141,021,003,088,096,169,001, 101
2160 DATA 141,025,208,173,215,194,240,004,076,229,194,000,169,001,141, 218
2170 DATA 215,194,169,192,141,018,208,076,049,234,169,000,141,215,194, 167
2180 DATA 141,018,208,032,002,195,076,188,254,162,000,169,000,157,000, 066
2190 DATA 212,232,224,025,208,248,096,000,000,173,001,195,208,012,169, 211
2200 DATA 000,141,004,212,141,000,195,141,032,208,096,173,000,195,240, 242
2210 DATA 009,206,001,195,169,011,141,032,208,096,169,015,141,024,212, 093
2220 DATA 141,000,195,162,000,189,217,192,157,000,212,232,224,007,208, 088
2230 DATA 245,096,174,225,192,169,048,141,226,192,141,227,192,141,228, 077
2240 DATA 192,224,000,240,007,032,081,195,202,076,069,195,096,238,228, 027
2250 DATA 192,173,228,192,201,058,240,001,096,169,048,141,228,192,238, 093
2260 DATA 227,192,173,227,192,201,058,240,001,096,169,048,141,227,192, 080
2270 DATA 238,226,192,096,173,218,192,141,225,192,032,055,195,173,226, 014
2280 DATA 192,141,214,190,173,227,192,141,215,190,173,228,192,141,216, 009
2290 DATA 190,173,217,192,141,225,192,032,055,195,173,226,192,141,222, 006
2300 DATA 190,173,227,192,141,223,190,173,228,192,141,224,190,173,219, 060
2310 DATA 192,141,225,192,032,055,195,173,226,192,141,246,190,173,227, 040
2320 DATA 192,141,247,190,173,228,192,141,248,190,173,220,192,141,225, 077
2330 DATA 192,032,055,195,173,226,192,141,238,190,173,227,192,141,239, 046
2340 DATA 190,173,228,192,141,240,190,173,221,192,141,225,192,032,055, 025
2350 DATA 195,173,226,192,141,230,190,173,227,192,141,231,190,173,228, 086
```

Program

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2360 DATA 192,141,232,190,173,222,192,141,225,192,032,055,195,173,226,  021
2370 DATA 192,141,254,190,173,227,192,141,255,190,173,228,192,141,000,  129
2380 DATA 191,173,223,192,141,225,192,032,055,195,173,226,192,141,006,  053
2390 DATA 191,173,227,192,141,007,191,173,228,192,141,008,191,173,224,  148
2400 DATA 192,141,225,192,032,055,195,173,226,192,141,014,191,173,227,  065
2410 DATA 192,141,015,191,173,228,192,141,016,191,032,168,190,096,096,  014
2420 DATA 192,141,015,191,173,228,192,032,055,195,173,226,192,141,145,  125
2430 DATA 173,144,199,141,225,192,032,055,195,173,226,192,141,147,196,  122
2440 DATA 173,227,192,141,146,196,173,228,192,141,147,196,096,162,016,  102
2450 DATA 160,014,024,032,240,255,162,000,189,133,196,240,007,032,210,  034
2460 DATA 255,232,076,120,196,096,030,070,088,032,078,085,077,066,069,  088
2470 DATA 082,032,005,048,048,048,000,032,235,196,238,144,199,173,144,  208
2480 DATA 199,141,225,192,032,055,195,173,226,192,141,145,196,173,227,  069
2490 DATA 192,141,146,196,173,228,192,141,147,196,032,110,196,032,251,  001
2500 DATA 196,032,117,195,096,032,235,196,206,144,199,173,144,199,141,  201
2510 DATA 225,192,032,055,195,173,226,192,141,145,196,173,227,192,141,  220
2520 DATA 146,196,173,228,192,141,147,196,032,110,196,032,251,196,032,  249
2530 DATA 117,195,096,032,113,199,160,000,185,217,192,145,254,200,192,  207
2540 DATA 008,208,246,096,032,113,199,160,000,177,254,153,217,192,200,  036
2550 DATA 192,008,208,246,032,168,190,096,032,028,197,032,106,197,096,  205
2560 DATA 032,028,197,032,131,197,096,162,000,169,032,157,079,197,232,  136
2570 DATA 224,016,208,248,169,000,141,096,197,162,000,189,097,197,240,  132
2580 DATA 007,032,210,255,232,076,047,197,160,000,032,207,255,201,013,  095
2590 DATA 240,007,153,079,197,200,076,061,197,140,096,197,096,074,074,  012
2600 DATA 074,074,074,074,074,074,074,074,074,074,074,074,074,074,000,  097
2610 DATA 000,147,005,078,065,077,069,032,032,000,174,203,197,138,160,  133
2620 DATA 255,032,186,255,173,096,197,162,079,160,197,032,189,255,169,  065
2630 DATA 000,032,213,255,096,174,203,197,138,160,255,032,186,255,173,  204
2640 DATA 096,197,162,079,160,197,032,189,255,169,219,133,254,169,197,  089
2650 DATA 133,255,169,254,162,137,160,207,032,216,255,096,173,203,197,  056
2660 DATA 201,001,240,014,169,001,141,203,197,169,049,141,101,189,032,  059
2670 DATA 204,197,096,169,008,141,203,197,169,056,141,101,189,032,204,  181
2680 DATA 197,096,008,162,022,160,026,024,032,240,255,173,101,189,032,  141
2690 DATA 210,255,096,120,169,001,141,026,208,173,017,208,041,127,141,  194
2700 DATA 017,208,169,000,141,013,220,141,014,220,169,254,141,020,003,  149
2710 DATA 169,197,141,021,003,088,096,000,169,001,141,025,208,173,253,  238
2720 DATA 197,240,003,076,024,198,169,192,141,018,208,169,001,141,253,  164
2730 DATA 197,076,049,234,169,000,141,018,208,141,253,197,032,043,198,  091
2740 DATA 169,015,141,024,212,076,188,254,173,239,198,240,051,173,242,  189
2750 DATA 198,208,027,162,000,189,215,198,157,000,212,232,224,007,208,  218
2760 DATA 245,189,215,198,141,212,198,169,001,141,242,198,076,099,198,  244
2770 DATA 206,212,198,173,212,198,208,011,169,000,141,239,198,141,242,  164
2780 DATA 198,141,004,212,173,240,198,240,051,173,243,198,208,027,162,  208
2790 DATA 000,189,223,198,157,007,212,232,224,007,208,245,189,223,198,  219
2800 DATA 141,213,198,169,001,141,243,198,076,155,198,206,213,198,173,  020
2810 DATA 213,198,208,011,169,000,141,240,198,141,243,198,141,011,212,  229
2820 DATA 173,241,198,240,051,173,244,198,208,027,162,000,189,231,198,  079
2830 DATA 157,014,212,232,224,007,208,245,189,231,198,141,214,198,169,  187
2840 DATA 001,141,244,198,076,211,198,206,214,198,173,214,198,208,011,  007
2850 DATA 169,000,141,241,198,141,244,198,141,018,212,096,000,000,000,  000
2860 DATA 000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,  000
2870 DATA 000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,  228
2880 DATA 173,239,198,208,004,032,016,199,096,173,240,198,208,004,032,  009
2890 DATA 048,199,096,173,241,198,208,003,032,080,199,096,173,112,199,  073
2900 DATA 141,144,199,032,113,199,160,000,177,254,153,215,198,200,192,  181
2910 DATA 008,208,246,169,001,141,239,198,169,000,141,242,198,096,173,  000
2920 DATA 112,199,141,144,199,032,113,199,160,000,177,254,153,223,198,  050
2930 DATA 200,192,008,208,246,169,001,141,240,198,169,000,141,243,198,  104
2940 DATA 096,173,112,199,141,144,199,032,113,199,160,000,177,254,153,  039
2950 DATA 231,198,200,192,008,208,246,169,001,141,241,198,169,000,141,  208
2960 DATA 244,198,096,000,174,144,199,169,199,133,255,169,145,133,254,  005
2970 DATA 224,000,240,015,165,254,024,105,008,133,254,144,002,230,255,  184
2980 DATA 202,076,124,199,096,000,255,000,000,000,000,000,000,000,000,
```

Program

C64 Keyboard Matrix and the I.R.Q. System

by K. Munn

This is a simple routine explaining the idea behind using I.R.Q.'s.

In the past, you may have seen assembly language listings which contain sections like the one below and wondered where the comparison values came from and how they work within a program.

```
100 LDA $C5
110 CMP  $04
120 BEQ XXXX
```

It's not commonly known that, when a keypress is made, an individual matrix value is placed into location 197 ($C5 hex). These values do not correspond to either the Commodore ASCII codes or to the screen Character codes. Neither are they to be found in the otherwise excellent Commodore 64 Programmer's Reference Guide. Listed below is a table of keyboard matrix values.

Note that these values are assigned to individual keys and not to characters. Therefore, it is immaterial whether the SHIFT/CBM/CTRL keys are held down or not, the values remain the same.

Incidentally, the keypress values of the SHIFT/CBM/CTRL keys are held in another memory location ie. 653 ($028D hex) and when PEEKed return values of 1, 2 and 4 respectively. When one or more of these keys are held down, their values become accumulative and are stored in the same location, indicated by a number ranging from 0 to 7. Thus, if the three keys were held down the value 7 would appear in location 653. If SHIFT and CTRL were held down at the same time PEEKing location 653 would return the value 5 etc.

Armed with this information, we can now unravel the assembly language program above.

100 LDA $C5 ! Load the accumulator with the keyscan value currently held in location 197

110 CMP #$04 ! Compare that value with the value of 4, ie. the matrix value of the F1 key.

120 BEQ XXXX ! Branch to the routine programmed for use with F1. If the value is <> 4 then carry on to the next line number.

Using this information in conjuction with the IRQ interrupt system, we can make the CBM 64 do many jobs to help make programming easier.

Briefly, the IRQ interrupt system checks that the computer is performing all the housekeeping jobs which keeps it working normally, keyscans, updating the screen etc. These interrupts take place approximately 60 times a second.

The IRQ interrupt vectors are at locations 788 and 789 ($0314 and $0315 hex) in lo/hi-byte form and normally points to the interrupt servicing routine in ROM at location $EA31. We can, however, POKE these locations and make the vector point to our own machine code programe prior to conducting its own normal functions. The program whic accompanies this article demonstrates one of the many uses to which we can put our new-found knowledge. The first program is a BASIC loader. Once typed in, SAVE it before attempting to execute the code as it will initialise and NEW itself on RUNning. The second program is for those of you with an assembler. It is fully annotated with remarks on the program's execution and will help you follow the program flow.

The program is placed in memory within the 4K block beginning at location 49152 and is initalised by SYS 49152. The program is simplicity itself to use and the functions are as follows:—

F1 indefinitely pauses a BASIC program whilst depressed and is useful in following program execution or listing line numbers etc.

F3 advances the border colour.

F5 advances the screen colour.

F7 advances the screen character colour.

This short program illustrates the value of the keyboard matrix system when used in conjunction with IRQ interrupts. It's interesting to note that, although only 4 keys are used, it's perfectly possible to utilise the function keys to perform 16 different jobs if used in conjunction with the SHIFT/CBM/CTRL keys. All that's required is to insert comparisons whilst PEEKing location 653, and then branching to the required routine.

Enjoy yourself with the keyboard matrix and IRQ interrupts. Experiment with them and use the information contained in this article to make your own programming easier.

It's even possible to have a one-key keyword entry system similar to the Sinclair Spectrum. But then, that's another story...

← — 57	1 — 56	2 — 59	3 — 8	4 — 11	5 — 16	6 — 19	7 — 24
8 — 27	9 — 32	0 — 35	A — 10	B — 28	C — 20	D — 18	E — 14
F — 21	G — 26	H — 29	I — 33	J — 34	K — 37	L — 42	M — 36
N — 39	O — 38	P — 41	Q — 62	R — 17	S — 13	T — 22	U — 30
V — 31	W — 9	X — 23	Y — 25	Z — 12	+ — 40	- — 43	£ — 48
— 46	* — 49	↑ — 54	: — 45	; — 50	= — 53	— 47	, — 44
/ — 55	F1 — 4	F3 — 5	F5 — 6	F7 — 3	SPACE — 60	RETURN — 1	INST/DEL — 0

CLR/HOME — 51 UP/DOWN CURSOR — 7LEFT/RIGHT CURSOR — 2

Program

```
100 ! ### P A U S E / C O L O U R ###
110 ! COPYRIGHT (C) K. MUNN 1986
120 ! THIS ASSEMBLER PROGRAM IS FULLY
130 ! RELOCATABLE IN ITS PRESENT FORM
140 ! LINE 150 REQUIRES ALTERATION IF
150 ! PROGRAM RELOCATION IS DESIRED

160 !
170 *=$C000             ! INITIALISE START OF PROGRAM TO LOCATION 49152
180 SEI                 ! DISABLE IRQ INTERUPTS
190 LDA #$0D            ! LOAD LO-BYTE OF START LOCATION
200 STA $0314           ! INTO LO-BYTE OF IRQ VECTOR
210 LDA #$C0            ! DO THE SAME TO THE HI-BYTE AND

220 STA $0315           ! POINT IRQ VECTOR TO OUR PROGRAM
230 CLI                 ! RE-ENABLE INTERUPTS
240 RTS                 ! RETURN TO SUBROUTINE
250 PAUSE JSR $FF9F     ! BRANCH TO KEYSCAN ROM ROUTINE
260 LDA $C5             ! LOAD MATRIX VALUE OF LAST KEYSCAN
270 CMP #$04            ! AND COMPARE WITH 'F1' MATRIX

280 BEQ PAUSE           ! IF SO BRANCH TO PAUSE LOOP
290 LDA $C5             ! IF NOT TAKE NEXT MATRIX VALUE
300 CMP #$05            ! IS IT 'F3'
310 BEQ BORDER          ! IF SO BRANCH TO BORDER ROUTINE
320 BACK1 LDA $C5       ! IF NOT TAKE NEXT MATRIX VALUE
330 CMP #$06            ! IS IT 'F5'

340 BEQ SCREEN          ! IF SO BRANCH TO SCREEN ROUTINE
350 BACK2 LDA $C5       ! IF NOT TAKE NEXT MATRIX VALUE
360 CMP #$03            ! IS IT 'F7'
370 BEQ CURSOR          ! IF SO BRANCH TO CURSOR ROUTINE
380 BACK3 JMP $EA31     ! JUMP TO IRQ SERVICING ROUTINE
390 RTS                 ! IN ROM AND RETURN TO BASIC

400 BORDER INC $D020    ! INC BORDER MEMORY BY 1
410 JSR WSELSE          ! JUMP TO A TIME WASTING LOOP
420 JMP BACK1           ! JUMP TO SCREEN ROUTINE COMPARISON
430 SCREEN INC $D021    ! INC SCREEN MEMORY BY 1
440 JSR WSELSE          ! WASTE MORE TIME
450 JMP BACK2           ! JUMP TO CURSOR ROUTINE COMPARISON

460 CURSOR INC $0286    ! !NCREASE MEMORY IN LOCATION 646
470 LDA $0286           ! STORE VALUE IN LOCATION 646
480 LDX #$00            ! START LOOP COUNTER AT ZERO
490 FILL STA $D800,X    ! STORE VALUE OF LOCATION
500 STA $D900,X         ! 646 INTO COLOUR MEMORY
510 STA $DA00,X         ! FROM LOCATION 55296

520 STA $DB00,X         ! TO LOCATION 56295
530 INX                 ! INC LOOP BY ONE AND IF LESS THAN
540 BNE FILL            ! 255 BRANCH BACK TO FILL ROUTINE
550 JSR WSELSE          ! ZZZZZZZ
560 JMP BACK3           ! BRANCH TO INTERUPT SERVICE

570 WSELSE LDA #0       ! START OF THE TIME WASTING LOOP
580 STA $FB             ! MACHINE CODE IS SO FAST THAT IF
590 LDX #$00            ! THIS ROUTINE WERE NOT PRESENT
600 LOOP INC $FB        ! THE COLOURS IN THE BORDER, SCREEN
```

```
610 BNE LOOP          ! AND SCREEN CHARACTER ROUTINES
620 INX               ! WOULD FLASH TOO FAST TO CONTROL
630 CPX #$00          ! THIS LOOP ENABLES EASY SELECTION
640 BNE LOOP          ! REMOVE THE LOOP INSTRUCTIONS
650 RTS               ! TO SEE THE DIFFERENCE IN SPEED

100 REM ### P A U S E / C O L O U R ###
110 REM COPYRIGHT (C) K. MUNN 1986
120 REM WHEN THE PROGRAM LOADS IT WILL
130 REM AUTO-INITIALISE AND NEW ITSELF
140 REM THE UTILITY IS NOW INVISIBLE
150 REM TO YOUR OWN BASIC PROGRAMS
160 REM F1 WILL PAUSE BASIC
170 REM F3 ADVANCES BORDER COLOUR
180 REM F5 ADVANCES SCREEN COLOUR
190 REM F7 ADVANCES CHARACTER COLOUR


200 FOR X = 49152 TO 49258:READ A:POKE X,A:NEXT:SYS 49152:NEW
210 DATA 120,169,013,141,020,003,169,192,141,021,003,088
220 DATA 096,032,159,255,165,197,201,004,240,247,165,197
230 DATA 201,005,240,016,165,197,201,006,240,019,165,197
240 DATA 201,003,240,022,076,049,234,096,238,032,208,032
250 DATA 091,192,076,028,192,238,033,208,032,091,192,076
260 DATA 034,192,238,134,002,173,134,002,162,000,157,000
270 DATA 216,157,000,217,157,000,218,157,000,219,232,208
280 DATA 241,032,091,192,076,040,192,169,000,133,251,162
290 DATA 000,230,251,208,252,232,224,000,208,247,096
```

★ Programme Submission Procedure ★

DO NOT submit any programme or routine that you do not either own or have proper authority to do so.

ALWAYS include your name, address and the date on all material and any enclosures.
Do not forget to to make it clear exactly which computer/s your programme or article is applicable to.

Include ROM or DOS versions wherever they are pertinent.

Number all pages.

If you have to submit work which is hand-written then you must make sure it is printed clearly.

Never use staples. Use paperclips if necessary.
If you are saving your programme to tape then save it AT LEAST twice on each side.
When you save a programme on disk save it twice and call the second file "BACKUP".

Remember to label all tapes and disks with your name and the title of the programme. Label tape or disk with your name and the name or title of the programme.

Always ensure that disks are well packaged. They should ideally be sent in a commercial disk mailer or at least packed between two pieces of hardboard or rigid plastic.

Please allow at least 8 weeks for acknowledgement as all programmes have to be thoroughly tested and made into a suitable format.

Enclose a self-addressed stamped envelope or package if you would like your programme to be returned.

★ Programming tips ★
If you can, use CHR$(x) type commands instead of those hard to read graphic symbols.
If necessary renumber your programme on completion as many readers use auto number utilities to ease typing in.

Try to keep instructions within the programme itself as a sensible level. You can expand on them within the accompanying text if necessary.

TEST your programmes before submitting them or even better get a friend to test them for you.

If a programme contains machine code data please use decimal and not hex as there are fewer digits to be confused. Try and keep the same number of data statements in each line. Please add some form of error checking if your programme contains any more than five lines of data. There is a suitable routine at the end of this article.

Feature

Int..er..rupted Again

In the April issue of this August journal (or was it the August issue of this April journal) there was an article of mine which explained briefly how interrupts work on the 64 by using something called the Hardware Interrupt Vector. In the same issue came a query from one M. A. Smith of Bures in Suffolk regarding the problems he was having getting sprites to move commands. An obvious call for an interruption, and with all due respect to Rae West I don't think his reply of "read page 272 of my book" was the most detailed of answers to the reader's query. So, once more unto the breach, and before you know it we'll have sprites racing around all over the place.

Brief explanation

If anyone missed the last article on interrupts (shame, and that's you crossed off the editor's Christmas Card List), a very brief word of explanation. Every fiftieth of a second or so the 64 whizzes off to location $EA31 in memory and sorts a few things out. By altering the content of memory locations 788 and 789 we can make it go somewhere else first, and thus have some other operation performed before $EA31 is reached. Provided that we get there in the end, and that the program it reaches first is working correctly, then all well and good and the 64 gives the impression of performing two tasks at the same time.

And onto sprites

The reader's query concerned a specific problem, that of moving sprites around the screen. So, for the sake of getting a sprite up and running, consider the following BASIC program:

"Insert listing headed BASIC SPRITE MOVEMENT here. Ta."

The routine starting at line 62000 reads in the sprite data to the appropriate places, while the data itself is contained in lines 6300-63031. Two sprites are used, resembling an open and a closed eye, and by alternating the two one gets a fair resemblance to an eye winking. Before starting on this program I took the sprite design from Dave Parkinson (AMIGA supremo), and during develoment of it I took a glass or two of wine from the same bloke, so thanks are due to him for that.

Lines 19 to 166 control the sprite on the screen, and you'll see that the keys A and D are used to move the sprite left and right, while I and M move it up and down. Any other keys would have done equally as well. Lines 200 and 204 simply swop sprites, while line 300 makes a noise every time the sprite collides with the wall of the window in which it is encased. Lines 4 to 10 draw that up, and for the sake of clarity symbols like BLK have been used to represent pressing CONTROL and 1, CBM N for pressing the logo key and the N key to achieve a graphic character, and so on. SP represents SPACE bar, OFF represents reverse OFF, and as long as you DON'T type in the square brackets and commas we'll be all right.

Okay, nothing staggering yet, so let's put in some amendments to this program that will enable it to use another, later one.

"Either insert whole of AMENDMENTS TO BASIC PROGRAM here, or just use lines 19-32, since that's all that has changed. Ta."

As you can see, lines 19 to 32 are new, while lines 100 to 300 need to be removed altogether. The rest is the same. Don't, whatever you do, run this program yet though. The important lines to consider at the moment are lines 19 and 20. The four POKEs in line 19 determine, respectively, where the sprite starts in the X and Y co-ordinates, in which direction it will be travelling, and which particular sprite image is going to be the first one on display (an open eye, to begin with). Line 20 then alters the HIV to point to location $C350, but since we haven't got any code there yet there's precious little point in implementing it just at the moment. Save the program, reset the 64, and type in the next one:

"Insert listing headed BASIC LOADER here. Ta."

Onto machine code

The beauty about using a BASIC loader is that you can use the program without having to know anything about machine code. So, type it in and run it if you like, and provided that you've entered the data correctly (the program will tell you) then you can re-load our amended BASIC program and run it. Do, however, save the BASIC loader first in case of disaster. This time, when the HIV is reset to go to $C350, there'll be something there for it to play with. As before, pressing A, D, I and M will cause the sprite to move left, right, up and down respectively. From the little display in the left hand corner of the screen you can see that BASIC is still running quite happily, and if you don't believe it then just break into the program (run/stop as per normal) and list it. The sprite will be quite content to trundle about the screen, and you can still press the four keys to move it around.

However, the problem with BASIC loaders is that you can't do anything particularly useful with them if your knowledge of machine code is zero, so we'll spend a bit of time looking at various parts of it to see what we can alter. First of all, you might not like the choice of letters used to move the sprite about, and I must admit there is something slightly disconcerting about sending a sprite zooming up the screen every time you type the word LIST, for example. So, following closely.

We're using location 197 to give us a value every time a key is pressed, and in the case of the letter A that value is 10. 0A in hexadecimal, but 10 will do for now. If you want to use another key (say Q, value returned equals 62) replace the value 10 in line 200 with a 62, and the value 10 in line 290 with a 62. To change the D key, to say the E key (value returned equals 14) you'll need to replace the 18 in line 200 with a 14, and the 18 in line 250 with a 14. Similarly, to alter the I and M keys, you'll need to alter the value 33 in line 210 and line 350 for the letter I, and the value 36 in line 210 and line 320 for the letter M.

With me so far? Next, you might want to alter the sprite data pointer, to show different sprites on the screen. So, in the BASIC program you'll need to mess

CONTINUED

CONTINUED

about with the value 248 in line 19, and the first value of 248 in line 360. Alter those, and you'll get different sprites displayed.

That was the easy part. Now you might want to alter the area traversed by the sprite, which depends on four values at the moment. These are the maximum and minimum X co-ordinates, and ditto for the Y co-ordinates. In order to make life easier, this program does not allow for sprites moving beyond an X co-ordinate of 255 (boo, hiss), so if you want tomuck about with that you're on your own. However, the X minimum and maximum values are stored as 105 in line 230 and 240 in line 260. The corresponding Y values are stored as 64 inn line 290 and 210 in line 330. Just put whatever values you feel like, if you want to have the sprite careering madly around somewhere else.

More sprites

Finally, you might want more than one sprite, responding to different keys perhaps. Jam as well, eh? Okay. This, as you umight imagine, requires major surgery to the machine code side of things. To get the easy stuff out of the way first, add the following two lines to our BASIC driver program:

"Insert listing headed "FURTHER AMENDMENTS here."

You will see that line 18 is very similar to the existing line 19, and just sets some data up for another sprite. The same winking eye designs have been used, but anything would do really. Having typed in the changes, re-save the program.

To alter the original BASIC loader, change the 049,234 at the end of line 220 to read 080,198. As above, once the changes have been typed in, re-save the program. Now, to finish it all off, we need this second loader:

"Insert listing headed SECOND LOADER here. Ta."

As before, type it in and save it before attempting to use it. The sequence of events is now as follows. Load in the amended first BASIC loader and run it. Load in this econd BASIC loader and run that. Finally, load in the amended BASIC driver program and run that. Provided that everything has been typed in correctly, two sprites will be running about the screen, one controlled by the A, D, I and M keys as before, the other by Q, E for left and right, and U, N for up and down. The second loader isn't in fact all that different from the first one, but because the code is in a different place in memory various parts of it have had to be altered to accommodate that fact. Everything that was in the first loader and was referencing, for example, $C3xx, is in this second loader referencing $C6xx. Occurences of $C4xx have similarly been altered to $C7xx, and so on. Finally, of course, a couple of changes had to be made in order to move sprite 2 around instead of sprite 1.

You want three sprites? Do it yourself! Seriously, the principle is exactly the same, and there's no real reason why you couldn't have any number of the little beasts running about the screen and generally getting in the way of things.

Conclusion

A fair amount of typing in answer to a query, but at least it solves the problem and provides another insight into the workings of the 64. Interrupts are fun to play with, and very useful if you can actually master them. Perhaps next month we might take a look at something else that can be done with our old friend the Hardware Interrupt Vector.

P.G.

COMPETITION RESULTS

S.F. Competition

Kolin Robertson, Lincs; Kristian Benning, Wilts; M. Rizzo, Malta.

Bazooka Bill

1st: Andrew Ayers, Stoke-on-Trent, Staffs.

Runners-up: Ian Todd, Sussex; D. Hawes, Orpington; Martin Appel, Newport; S. A. Brentnall, Mapperley; S. Andrews, Purley; G. Galloway, Spain; Andrew Elliott, Beds; Gavin Way, Melksham; J. Malinowski, Lincolnshire; Wayne Dibben, Upminster; J. Witney, Bilsby; J. Bartley, Glastonbury; W. Rizzo, Malta; J. Arnold, Merseyside; Jane Fletcher, Burley; Gareth Dear, Eaton Bray; Kieth Haggerty, Blyth; Stuart Harper, Bath; Steven Duxbury, Wakefield; CNO Plunkett, Ruislip; Allan Bland, Goole; Sean Minster, Cheshire; P. Elphick, Wallington; Peter Hynds, Wickford; Paul Dolan, N. Yorkshire; S. Garratt, Crewe; Alex Arrol, Hampton; M. Darlington, Shropshire; G. Bushell, Reading; J. Consadine, N. Humberside; Steve Skinner, Nottingham; L. Lodeiro, London; Alan Bateman, Avon; Phillip Embleton, Aberdeenshire; Mathew Tipple, Tyne & Wear; Russell Bloor, Stoke-on-Trent; John Bullions, London; Geoff Robertson, Merseyside; Peter Roberts, Woking; Steven Lea, Cradley Heath.

Judge Dredd/Melbourne House Competition

Winner: David Laidler, Gosport, Hants.

Runners-up: M. Darlington, Telford; C. Garbutt, Essex; W. Dibben, Upminster; S. Benning, Wilts; S. Minter, Cheshire; A. Marney, London; Steven Duxbury, Wakefield; Darren Hawes, Orpington; A. Bland, N. Humberside; J. Bartley, Glastonbury; L. Lodeiro, London; J. Malinowski, Lincs; P. Dolan, Selby; C. Wynne, Chichester; Gavin Way, Wilts; Jane Fletcher, Burley; M. Prince, Kent; P. Cheesebrough, Keswick; M. Rizzon, Malta; J. Arnold, St. Helens; J. Witney, Lincs; M. Tipple, Tyne & Wear: John Consadine, N. Humberside; F. Morrissey, Nuneaton.

T-Shirt Jamboree

Winner: CNIK, Southampton.

Runners-up: Kolin Robertson, Lincs; A. Marney, London; Martyn Appell, Isle of Wight.
Extra generous third prizes to: Richard Perkins, Chesterfield; M. Caine, Edinburgh; Aaron Gale, Southampton; James Witney, Lincs; Chris McLean, Cheshire; Geoff Robertson, Merseyside; Barry Kilborn, Stirlingshire.

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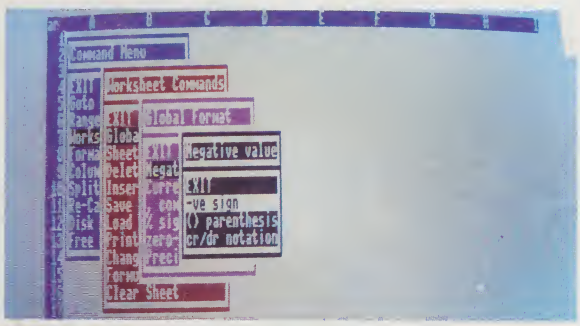

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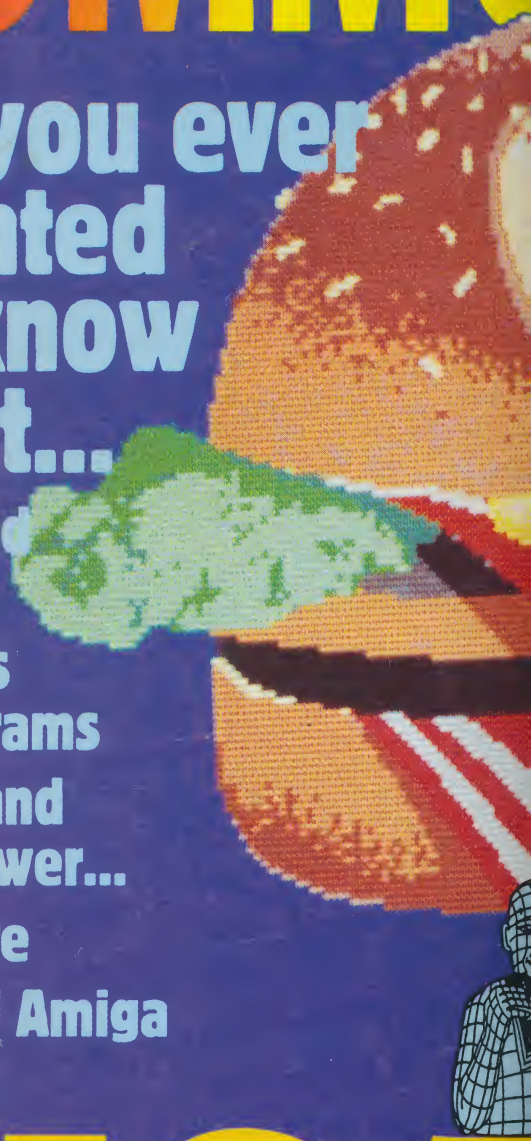

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